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PROSPECTUS

OF THE

California College of Pharmacy.

THE LIBRARY OF THE
FEB 26 1931
UNIVERSITY OF ILLINOIS.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

THIRD ANNUAL SESSION

1875,

COMMENCING MARCH 10th.

SAN FRANCISCO:
H. S. CROCKER & CO., PRINTERS.
1875.

THE LIBRARY OF THE
FEB 26 1931
UNIVERSITY OF ILLINOIS.

CALIFORNIA

COLLEGE OF PHARMACY.

Incorporated Aug. 7th, 1872.

The California College of Pharmacy being affiliated with the University of California, forms one of the Technical Schools contemplated by the framers of the "Organic Act" of the University, each of which is designed to be separate and distinct as regards its peculiar sphere and the work appertaining thereto, but connected by a tie similar to that uniting the States of the Union, occupying in relation to one another distinct and independent positions, yet connected through the general government of the University.

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"This agreement may be canceled by mutual consent, at any time, or by the withdrawal of either party to it, after twelve months' notice to the other party."

1875.

Officers of the College.

President:
WM. T. WENZELL.

Vice-President:
JOHN CALVERT.

Secretary:
EMLEN PAINTER.

Treasurer:
WM. GEARY.

Board of Trustees.

Wm. Geary,
John Calvert,
Wm. T. Wenzell,
Wm. M. Searby,
G. G. Burnett,
Emlen Painter.

FACULTY.

PRESIDENT:

DANIEL C. GILMAN, M. A., Pres. Univ. Cal.

JOHN CALVERT,

PROFESSOR OF PHARMACY.

WM. M. SEARBY,

PROFESSOR OF MATERIA MEDICA.

WM. T. WENZELL,

PROFESSOR OF CHEMISTRY.

HERMANN BEHR, M. D.,

PROFESSOR OF BOTANY.

TEXT BOOKS.

U. S. Dispensatory and U. S. Pharmacopœia.
Pereira's Materia Medica.—Ed. by H. C. Wood.
Fownes' Chemistry.
Attfield's Chemistry.
Roscoe's Chemistry.
Gray's Botany.

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1873-1877/78

College of Pharmacy.

The California College of Pharmacy has entered on the third year of its existence, and the Trustees have to congratulate the members and students on the progress which has been made during the past session.

The reports of the officers show that the institution is in a very satisfactory condition. The several chairs of instruction are filled by able, practical men, with ample experience in the different departments over which they preside.

The class of 1874 consisted of twenty-three students. The attendance was good, and the interest manifested was creditable to the students, as well as gratifying to the Professors.

In presenting this Circular to the Pharmacists of the Pacific Coast, the Board of Trustees would remind them that Pharmaceutical Education is a matter in which they are all interested. The future status of our body depends on the success which attends our present efforts. The public sentiment of to-day demands a higher degree of proficiency in our calling than is found in the generality of our Drug stores. To command the respect and confidence of the community, our young men must qualify themselves for the position they assume to fill; and the Trustees appeal to the Apothecaries of the Pacific States to give their countenance and good will to the College, which is now providing facilities for our young men to acquire a theoretical and practical knowledge of our profession. And they further urge upon all who can make the necessary arrangements, to afford their clerks and apprentices an opportunity of attending the Lectures, as well as a short time each day for study. The Trustees believe that employers will, in most cases, be amply compensated for the small sacrifice thus made, by the increased efficiency and devotedness of their employes.

As yet, no rule for a preliminary examination (before matriculation) has been adopted by the College, but as the time is not distant when

pharmaceutical examinations will be the rule, the Trustees would urge on Pharmacists the desirability of taking for apprentices such youths only as have had the advantage of a liberal education. If a knowledge of the elements of Latin have not been acquired, the candidate should lose no time in making himself sufficiently familiar with that language to enable him to read prescriptions and pharmacopœias.

And the Trustees further wish it to be made known that the students cannot reap the full benefit of the lectures, nor acquit themselves creditably at the examinations of this College without such necessary education.

Legislative enactments relating to Pharmacy have been in force for several years in the cities of New York, Philadelphia, Baltimore, Boston, St. Louis and San Francisco, which compel all persons commencing business to show that they are properly qualified.

The College is now permanently located in Toland Hall, a fine building belonging to the University of California. The accommodations, consisting of Lecture-room, Laboratory, Library and Museum, are abundant for our present wants, and well adapted to the purposes of the College.

The plan of instruction for the coming session will embrace the branches of Chemistry, Pharmacy, Botany and Materia Medica. It is the design of the Trustees to furnish such a course as will give the students a knowledge of the general principles of the sciences taught, and show their special and practical application to pharmaceutical requirements.

The professors will assist the students in their studies by occasional reviews of the ground gone over, thus giving opportunity for the correction of misapprehensions and erroneous conclusions, and stimulating them to exertion by setting up a generous emulation. The experience of the past has shown that in this way the interest of the students is greatly increased, and many of their difficulties are removed.

LECTURE TERM.

The regular term for 1875 will commence on Tuesday, March 10th, and terminate in September. In order that students may derive full benefit from the lectures, they should be present at the opening of the session.

The lectures will be given on *Tuesday* and *Friday* evenings of each week, at Toland Hall, Stockton street, between Chestnut and Francisco streets.

PHARMACY.

The lectures will be delivered on Tuesday of each week at 7.30 P. M.

The principal subjects are as follows: Weights and measures of the U. S. and British Pharmacopœias and the metrical system. Specific gravity, thermometers, drug powdering, sifting, solution, filtration, maceration, percolation, re-percolation, evaporation, distillation.

The Galenical and Chemical preparations of the U. S. Pharmacopœia. Extemporaneous pharmacy, including construction of formulas, the art of combining medicinal agents, pills, mixtures, ointments, suppositories, plasters, etc.

CHEMISTRY.

The lectures will be delivered on Friday of each week at 7.30 P. M.

This course will present a systematic study of theoretical chemistry, according to the latest views of chemical philosophers.

Physics will be dwelt upon sufficiently for the illustration of the general properties of matter—the forces of gravitation, adhesion, and cohesion.

Caloric in its relation to chemistry will be treated of.

This will be followed by the laws of chemical affinity, the electro-chemical theory, symbols, nomenclature, and the laws of chemical combination. The molecular theory and the principals of crystallography will be fully illustrated, the former by graphic symbols and diagrams, the latter by models.

A full and concise course of the chemistry of the non-metallic and metallic bodies is next taken up, comprising the more important elements, and those of special interest to the pharmacal student.

The course to conclude with organic chemistry, in which the chemistry of the alcohols, ethers, organic acids, sugars, glucose, gums, starch, glucosides, alkaloids, &c. will receive their due share of attention.

MATERIA MEDICA.

The lectures will be delivered on Tuesday of each week at 8.30 P. M.

The lectures on Materia Medica are devoted to those substances, chiefly of vegetable origin, which are used in medicine, and which are included under the general designation of *drugs*.

These articles are treated of in a systematic manner, notice being taken of the sources from which they are derived, their natural and commercial history, principal constituents and remedial qualities. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration.

The students are instructed as to the proper time for collecting the various vegetable products, as well as the best modes of preserving them. Attention is called to their physical properties as met with in trade, and to the leading characteristics of each drug. Substitutions, adulterations, and natural impurities, with the methods of detecting the same, are duly considered, as also the distinguishing features observed in articles of superior and inferior quality.

BOTANY.

Friday evening of each week at 8.30 P. M. at Toland Hall, and on Monday of each week at 1 P. M. at the hall of Academy of Sciences. The lectures include structural, functional and systematic botany, and geography of plants. Excursions are made into the country on alternate weeks during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

CONDITIONS OF GRADUATION.

1. The candidate must be of good moral character, and have attained the age of twenty-one years.

2. He must have attended two full courses of the lectures given by this College, or one of those given by some other College of Pharmacy whose conditions of graduation are based upon the like term of service, and the final course in this college.

3. Written evidence of the four years service required by the Constitution, must be deposited with the Secretary of the College upon applying for examination.

4. He shall at the same time deposit with the same officer, an original dissertation upon some article of the Materia Medica, some Pharmaceutical Process, or the details of an analysis of some chemical substance which must have been performed by himself. This manuscript must be in his own handwriting, and be executed in a neat and legible manner.

5. He must be recommended jointly by the Professors and the Examining Board.

6. Such recommendation must be approved by the Board of Trustees.

7. Examinations shall only take place at the close of each course.

FEES.

Lecture Ticket (for the season).....$50.00
Matriculation Ticket (paid only once)..... 2.50
Diploma Fee.....10.00

The matriculation and lecture tickets must be obtained of the Secretary at the beginning of the session.

Members and graduates of the College, and students who have attended two sessions in the college, are admitted free to the lectures.

Medical students, or others not intending to pursue pharmacy as their avocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee, and that of the chair or chairs of instruction, and such students will enjoy the same advantages as regular students of pharmacy, except that they will not be eligible to the degree of graduate in pharmacy.

CLERKS AND STUDENTS.

Drug clerks and students on coming to the city, and those out of employment here, who are desirous of obtaining situations, may call upon the Secretary and register their names.

Young men coming to the city to attend lectures, should bear in mind that they cannot expect to receive much compensation whilst attending lectures and learning the business.

Pharmacists in want of assistants are informed that they can consult the list of applicants for situations, and are requested to notify the Secretary when vacancies occur in their establishments.

Any further information may be obtained by addressing

EMLEN PAINTER,
Sec'y Cal. College of Pharmacy,
S. E. cor. Clay and Kearny Streets,
San Francisco.

CLASS OF 1874.

Names.	Nativity.	Preceptors.
ANTHES, JOHN	San Francisco.	H. B. Shaw.
BACON, GASTON E.	Paris, France.	Painter & Calvert.
BASFORD, W. L.	San Francisco.	H. P. Wakelee.
BUSWELL, E. G.	Troy, N. Y.	Redington, Hostetter & Co.
CLINTON, C. A.	Dublin, Ireland.	
DONOVAN, JOS.	New Bedford, Mass.	J. G. Steele.
EVANS, THOS. A.	Bristol, Eng.	A. Evans.
GIBSON, JOHN B.	Philadelphia, Pa.	Redington, Hostetter & co.
GOLDMAN, B.	Bavaria.	
GRAHAM, T. D.	Liverpool, Eng.	G. G. Burnett.
HARRIS, H. R.	Santa Clara, Cal.	J. W. Angell.
HEANEY, JOHN	Philadelphia, Pa.	W. T. Wenzell.
HOWELL, JOSEPH	New York.	Chas. Langley & Co.
KAHN, ADOLPHE	Brooklyn, N. Y.	Alfred Gros.
LANE, J. H.	Plymouth, Eng.	Wm. Simpson.
MEYER, F. H.	Baden, Germany.	P. Greichten.
MEYER, R.	New York.	E. Abramson.
McLEAN, F. P.	Lebanon, N. H.	Judson & Co.
PRICE, W. E.	Kingston, Can.	Painter & Calvert.
SEVERIO, FRANK	Tuolumne Co. Cal.	W. E. Mayhew.
SPROUL, W. E.	Maine.	A. M. Kurtz.
TIBBETTS, L. C.	Pillsbury, Pa.	J. R. Gates & Co.
YOUNG, JOHN M.	Montreal, Can.	W. M. Searby.

APPENDIX.

AN ACT

To Regulate the Practice of Pharmacy in the City and County of San Francisco. Passed by the California Legislature, Session of 1871–2, and Approved March 28, 1872.

The People of the State of California, Represented in Senate and Assembly do enact as follows:

Section One. From and after the first day of June, A. D. eighteen hundred and seventy-two, it shall be unlawful for any person, unless a registered pharmacist or a registered assistant pharmacist within the meaning of this Act, to open or conduct any pharmacy or store for retailing, dispensing, or compounding medicines or poisons, except as hereinafter provided.

Sec. Two. Any person in order to be registered must be either a graduate in pharmacy, a licentiate in pharmacy, a practicing pharmacist, or a practicing assistant pharmacist.

Sec. Three. Graduates in pharmacy must be such as have had four years experience in stores where presciptions of medical practitioners are compounded, and each must have obtained a diploma from a college of pharmacy within the United States, or from an authorized foreign institution or Examining Board. Licentiates in pharmacy are such as have had four years experience in stores where prescriptions of medical practitioners are compounded, and shall have passed an examination before the Board of Pharmacy; also such foreign pharmacists as shall present satisfactory credentials or certificates of their attainments to the Board of Pharmacy. Practicing pharmacists are such persons only as at or prior to the passage of this Act have kept and continue to keep open stores in the City and County of San Francisco for compounding and dispensing of the prescriptions of medical practitioners, and for the sale of medicines and poisons. Practicing assistants in pharmacy are such persons of not less than eighteen years of age as at or prior to the passage of this Act have had two years experience in the compounding of the prescriptions of medical practitioners in the store of a practicing pharmacist, and shall furnish satisfactory

evidence of the same to the Board of Pharmacy. Persons of less than eighteen years of age, or less than four years experience, are as junior assistants or apprentices to be under the immediate supervision of a registered pharmacist or assistant pharmacist until they have become graduates or licentiates in pharmacy.

SEC. FOUR. The members of the California Pharmaceutical Society residing in San Francisco shall, during the month of May, eighteen hundred and seventy-two, and every third year thereafter, during the month of May, elect five of the most competent pharmacists of San Francisco to serve as a Board of Pharmacy. The members of this Board shall, within thirty days after their appointment, individually take and subscribe before the County Clerk, an oath, faithfully and impartially to discharge the duties prescribed by this Act. They shall hold office for the term of three years, and until their successors are appointed and qualified, and in each case of vacancy the said Board of Examiners shall select from three nominees elected at a meeting of the said Society. The Board shall organize for the transaction of business in the City of San Francisco by the election for the whole term of President and Secretary. Three members of the Board shall constitute a quorum. They shall meet at least quarterly, and have power to make by-laws for the proper fulfillment of their duties. The duties of this Board shall be to transact all business pertaining to the legal regulations of the practice of pharmacy and the retailing of poisons, and to examine and register all pharmacists. All persons applying for examination shall pay to the Secretary a fee of five dollars; and on passing the examination, shall be furnished with a certificate signed by the President and the Examiners.

SEC. FIVE. It shall be the duty of the Secretary to keep a book of registration open at some convenient place, of which due notice shall be given through the public press, in which shall be entered, under the supervision of the Board, the names, titles, qualifications, and places of business of all persons coming under the provisions of this Act; and it shall be the duty of all such persons to appear before the Board or its Secretary within a period of thirty days after its organization, and be registered. The fee for the first registration of graduates, licentiates, and practicing pharmacists, shall be two dollars; for assistants, one dollar. It shall be the duty of every person registered to have his registration renewed every year in the month of January, the fee for which shall be one dollar, and upon changing his place of business or engagement, to notify the Secretary within thirty days. The Secretary shall make all necessary alterations in the register, and notify all persons, on or befere the tenth day of Februray, who shall not have renewed their registration, for which notification the Secretary shall receive a fee of fifty cents; and in case no answer is received within fourteen days, such name shall be erased, unless an excuse satisfactory to the Board be presented; *provided, always*, that the said name shall be restored on payment of fifty dollars to the Secretary of the Board within one year. The Secretary shall give receipts for all moneys received by him, and pay said moneys to the Treasurer of the California Pharmaceutical Society, taking his receipt therefor. The salary of the Board of Pharmacy and of the Secretary, shall

be fixed by the Board of Directors of the California Pharmaceutical Society, to be paid out of the registration fees and fines.

Sec. Six. From and after the first day of June, eighteen hundred and seventy-two, every registered pharmacist who shall knowingly, intentionally, and fraudulently adulterate or cause to be adulterated, any drugs, chemicals, or medicinal preparation, shall be held guilty of a misdemeanor, and on conviction, shall be fined fifty dollars in the first, one hundred dollars in the second, and on conviction in the third case, his name shall be erased from the register.

Sec. Seven. *And be it further enacted,* That on and after the first day of June, eighteen hundred and seventy-two, it shall be unlawful for any person in the City and County of San Francisco, to retail any poisons enumerated in Schedules "A" and "B," appended to this Act, without distinctly labeling the bottle, box, vessel, or paper, and wrapper, or cover in which said poison is contained, with the name of the article, the word "Poison," and the name and place of business of the seller. Nor shall it be lawful for any person to sell or deliver any poison enumerated in Schedules "A" and "B" to any person, unless on due inquiry it is found that the person is aware of its poisonous character, and that it is to be used for a legitimate purpose. Nor shall it be lawful for any person to sell or deliver any poison included in Schedule "A," without, before delivering to the buyer, making or causing to be made an entry in a book kept for that purpose only, stating the date of sale, the name and address of the purchaser, the name and quantity of the poison sold, the purpose for which it is stated by the purchaser to be required, and the name of the dispenser; said book to be always open for inspection by the proper authorities, and to be preserved for at least five years. The provisions of this section shall not apply to the dispensing of poisons (in not unusual doses or quantities) upon the prescriptions of practitioners of medicine.

Sec. Eight. Be it provided that nothing contained in the foregoing section shall apply to, or interfere with the business of any practitioner of medicine who does not keep open shop for the dispensing and retailing of medicines and poisons, nor with the business of wholesale dealers.

Sec. Nine. Any person who shall attempt to procure registration for himself or for any other person under this Act, by making or causing to be made, any false representations, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be fined in a sum not exceeding five hundred dollars. Any registered pharmacist who shall permit the compounding and dispensing of prescriptions of medical practitioners in his store by persons not registered, except by junior assistsnts under the direct supervision of registered persons, or any person not registered who shall keep open shop for the retailing or dispensing of medicines and poisons, or who shall fraudulently represent himself to be registered, and any registered person who shall fail to comply with the regulations of this Act in regard to the retailing and dispensing of poisons, shall for every such offense be deemed guilty of a misdemeanor, and on conviction thereof, be fined fifty dollars.

SEC. TEN. All persons registered under this Act shall be exempt and free from all jury duty in the City and County of San Francisco.

SEC. ELEVEN. All Acts and parts of Acts in conflict with the provisions of this Act, in so far as they so conflict are hereby repealed.

SCHEDULE "A."

Arsenic and its preparations, corrosive sublimate, white precipitate, red precipitate, biniodide of mercury, cyanide of potassium, hydrocyanic acid, strychnia, and all other poisonous vegetable alkaloids and their salts, essential oil of bitter almonds, opium and its preparations, except paregoric and other preparations of opium containing less than two grains to the ounce.

SCHEDULE "B."

Aconite, belladonna, colchicum, conium, nux vomica, henbane, savin, ergot, cotton root, cantharides, digitalis, and their pharmaceutical preparations, croton oil, choloroform, chloral hydrate, sulphate of zinc, sugar of lead, mineral acids, carbolic acid, and oxalic acid.

BOARD OF PHARMACY.

JOHN CALVERT, President.
W. T. WENZELL, Secretary.
WM. SIMPSON,
MAX TSCHIRNER,
J. G. STEELE.

Books for registration will be open after June 1st, 1872, at the office of the Secretary, corner of Stockton and Market streets, San Francisco.

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UNIVERSITY OF ILLINOIS.

ALPHABETICAL LIST

OF THE

COLLEGES OF PHARMACY

IN THE

UNITED STATES,

Whose diplomas are granted only when the student possesses, in addition to the theoretical or scientific knowledge acquired by study, a practical knowledge of the apothecary business, obtained by actual experience for several years previous to examination.

California College of Pharmacy.....San Francisco, Cal.
Chicago College of Pharmacy.....Chicago, Ill.
Cincinnati College of Pharmacy.....Cincinnati, O.
Louisville College of Pharmacy.....Louisville, Ky.
Maryland College of Pharmacy.....Baltimore, Md.
Massachusetts College of Pharmacy.....Boston, Mass.
New York College of Pharmacy.....New York, N. Y.
Philadelphia College of Pharmacy.....Philadelphia, Pa.
St. Louis College of Pharmacy.....St. Louis, Mo.
Tennessee College of Pharmacy.....Nashville, Tenn.

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1877

FIFTH

ANNUAL ANNOUNCEMENT

OF THE

California College of Pharmacy.

THE LIBRARY OF THE
FEB 26 1931
UNIVERSITY OF ILLINOIS.

Department of Pharmacy,

UNIVERSITY OF CALIFORNIA.

SESSION 1877,

COMMENCING TUESDAY, MARCH 13.

SAN FRANCISCO:
FRANK EASTMAN, PRINTER.
1877.

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COLLEGES OF PHARMACY

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1877.

California College of Pharmacy.

INCORPORATED AUGUST 7, 1872.

President:
WILLIAM T. WENZELL.

Vice-President:
C. A. BAYLY.

Secretary:
EMLEN PAINTER.

Treasurer:
WILLIAM GEARY.

BOARD OF TRUSTEES:

WILLIAM GEARY,
WILLIAM T. WENZELL,
C. A. BAYLY,
WILLIAM J. BRYAN,
WILLIAM M. SEARBY,
EMLEN PAINTER.

FACULTY:

President: Prof. John Le Conte, M. D.,
President of the University of California.

William T. Wenzell, - - - Professor of Chemistry.
W. M. Searby, - - - Professor of Materia Medica.
Emlen Painter, - - - - Professor of Pharmacy.
Hermann Behr, M. D., - - - Professor of Botany.

School of Pharmacy.

[CIRCULAR.]

The Trustees of the California College of Pharmacy desire to call the attention of all persons engaged in the drug business on the Pacific coast to the following announcement of the lecture-course for the approaching session.

In no other part of the United States is there such need of the advantages which this College supplies. The long hours of business prevalent here, the frequent changes in the management of our various establishments, combined with other causes well known to every Apothecary, render it difficult for employers to give systematic instruction to their assistants and apprentices in the various branches of science with which they ought to be familiar. This instruction the College provides, and the Trustees hope that employers will afford their assistants the requisite time to attend the lectures, as well as a short time every day for study.

The Trustees would also urge young men who may have entered the drug business without a liberal education, to lose no time in making up this deficiency. In addition to a good English education, they should at least know enough of Latin to enable them to read prescriptions and pharmacopœias with readiness and accuracy.

TEXT-BOOKS.

U. S. Dispensatory and U. S. Pharmacopœia.
Barker's Chemistry.
Roscoe's Chemistry.
Fownes' Chemistry.
Pereira's Materia Medica. Ed. by Redwood and Bentley.
Parrish's Pharmacy.
Gray's Botany.

THE LECTURES

Will be delivered in the Hall of the Academy of Sciences, corner of Dupont and California streets, on Tuesday and Friday evenings, commencing March thirteenth, and terminating about the middle of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

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The lectures will be delivered on Friday of each week, at 7:30 P. M.

This course will present a systematic study of theoretical chemistry, according to the latest views of chemical philosophers.

Physics will be dwelt upon sufficiently for the illustration of the general properties of matter—the forces of gravitation, adhesion, and cohesion.

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A full and concise course of the chemistry of the non-metallic and metallic bodies is next taken up, comprising the more important elements, and those of special interest to the pharmacal student.

The course to conclude with organic chemistry, in which the chemistry of the alcohols, ethers, organic acids, sugars, glucose, gums, starch, glucosides, alkaloids, &c., will receive their due share of attention.

MATERIA MEDICA.

The lectures will be delivererd on Tuesday of each week, at 8:30 P. M.

The lectures on Materia Medica are devoted to those substances, chiefly of vegetable origin, which are used in medicine, and which are included under the general designation of *drugs*.

These articles are treated of in a systematic manner, notice being taken of the sources from which they are derived, their natural and commercial history, principal constituents, and remedial qualities. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration.

The students are instructed as to the proper time for collecting the various vegetable products, as well as the best modes of preserving them. Attention is called to their physical properties as met with in trade, and to the leading characteristics of each drug. Substitutions, adulterations, and natural impurities, with the methods of detecting the same, are duly considered, as also the distinguishing features observed in articles of superior and inferior quality.

PHARMACY.

The lectures will be delivered on Tuesday of each week, at 7:30 P. M.

The introductory lectures to this course embrace the art of weighing and measuring; definition of the systems of weights and measures in use, and authorized by the United States, British, French, and German Pharmacopœias; the theory and practice of obtaining the specific gravity of liquids and solids. A description of the apparatus necessary to the proper conduct of the business of the Pharmacist, and the purposes to which they are applied—such as Comminution, Solution, Filtration, Neutralization, Precipitation, Crystalization, and the management of heat in its application to the processes of Evaporation, Distillation, Sublimation, Calcination, &c., will be embraced in the regular course, in which the preparations and products, officinal in the United States and other Pharmacopœias, together with such non-officinal preparations as may merit attention, will be considered.

The classification adopted is based upon the most prominent proximate constituents contained in the drug under consideration, commencing with those substances containing prominently Lignin, and passing to those containing Starches, Gums, Sugars, Volatile Oils, Resins, Organic Acids, Alkaloids, Glucosides, Neutral Principles, Fixed Oils, &c.

It being impossible to consider each individual process minutely, it will be the chief aim to thoroughly elucidate those processes that are types of others; referring to the typical process whenever it can be done without depriving the student of valuable information, and drawing attention to any peculiarity or reason for modifying, or deviating from the type.

By this method of instruction it is believed the student will acquire a comprehensive knowledge of his profession and will readily find similarity between substances that are, physically, entirely different. Manufacturing and Extemporaneous Pharmacy will receive its full share of attention; and those processes that can be conveniently carried out by

the Pharmacist will be minutely dwelt upon. The adulterations and sophistications, to which the officinal preparations are subject, and the methods of their detection, will be noticed to the extent their importance may demand.

BOTANY.

The lectures will be delivered on Friday of each week, at 7:30 P. M.

The lectures include structural, functional, and systematic botany, and geography of plants. Excursions are made into the country on alternate weeks during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor, and on the day next succeeding the excursion, a lecture will be given in the hall of the Academy of Sciences at 1, P. M.

CONDITIONS OF GRADUATION.

1. The candidate must be of good moral character, and have attained the age of twenty-one years.

2. He must have attended two full courses of the lectures given by this College, or one of those given by some other College of Pharmacy whose conditions of graduation are based upon the like term of service, and the final course in this college.

3. Written evidence of the four years' service required by the Constitution, must be deposited with the Secretary of the College upon applying for examination.

NOTE. Any student who has not had the full four years' service here referred to, but who has complied with all the other conditions of graduation, may present himself for examination, and, should he receive the requisite number of credits, will be awarded a "Certificate of Proficiency," upon which he will afterwards be entitled to a Diploma on producing evidence of having completed the four years' practical experience.

4. He shall at the same time deposit with the same officer an original dissertation upon some article of the Materia Medica, some Pharmaceutical process, or the details of an analysis of some chemical substance, which must have been performed by himself. This manuscript must be in his own handwriting, and be executed in a neat and legible manner.

5. He must be recommended jointly by the Professors and the Examining Board.

6. Such recommendation must be approved by the Board of Trustees.

7. Examinations shall only take place at the close of each course.

FEES.

Lecture Ticket (for the season)	$50 00
Matriculation Tickets (paid only once)	2 50
Diploma Fee	10 00

The matriculation and lecture tickets must be obtained of the Secretary at the beginning of the session.

Members and graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures.

Medical students, or others not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee, and that of the chair or chairs of instruction, and such students will enjoy the same advantages as regular students of pharmacy, except that they will not be eligible to the degree of Graduate in Pharmacy.

CLERKS AND STUDENTS.

Drug clerks and students, on coming to the city, and those out of employment here, who are desirous of obtaining situations, may call upon the Secretary and register their names.

Young men coming to the city to attend lectures should bear in mind that they cannot expect to receive much compensation whilst attending lectures and learning the business.

Pharmacists in want of assistants are informed that they can consult the list of applicants for situations, and are requested to notify the Secretary when vacancies occur in their establishments.

Any further information may be obtained by addressing

EMLEN PAINTER,

Sec'y Cal. College of Pharmacy, S. E. cor. Clay and Kearny Streets, San Francisco.

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CURRAN, Mrs. M. K.	Tennessee.	Medical Student.
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ECCLES, WILLIAM C.	New York.	W. M. Searby.
EVANS, THOMAS A.	Bristol, England.	A. Evans.
GUILLEMARD, A. J.	Paris, France.	Medical Student.
GOLDMAN, B.	Bavaria.	
HARRIS, HENRY R.	Santa Clara.	J. W. Angell.
HARRIS, F. W.	New York.	Medical Student.
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ZEMANSKY, J. H.	New York.	William Koeller.

LIST OF GRADUATES.

1874.

J. P. HEANY.....Thesis, "Oreodaphne Californica."

1875.

ROBERT C. MEYERS....."Sesame Oil and its Uses."
THOMAS D. GRAHAM....."Oxytropis Campestris."
GASTON E. BACON.."Various Analyses of Tincture of Opium."
ADOLPH J. KAHN....."Pharmaceutical Education."
F. P. McLEAN....."Analysis of Magnesites."

1876.

NATHAN ROGERS....."Sium Latifolium."
FREDERICK E. RAY....."California Opium."
HENRY R. HARRIS....."Hydrocyanic Acid."

THE WRITTEN QUESTIONS

SUBMITTED TO CANDIDATES FOR EXAMINATION

FOR THE DEGREE OF

GRADUATE IN PHARMACY,

BY THE EXAMINING BOARD,

September, 1876.

CHEMISTRY.

I.

1. Give reaction for preparing oxygen from potassium chlorate?

2. Give the volume which two grams of oxygen will occupy at normal temperature and pressure?

3. State how many of the elements Cl., O., S., are equivalent to an atom of copper, silver, antimony, platinum, gold, and iron?

4. Calculate sp. gr. of oxygen from its density?

5. Give reasons why two molecules of hydrogen chloride are required to act upon one atom of zinc?

II.

Give formula and names for the following compounds? Ag' Cu'', Sb''', B''', Su^{IV}, Hg'', Fe'', Fe''_2, P^{V}, Cu''_2 with chlorine?

III.

State how chlorine is decomposed when exposed to sun-light, and furnish equation?

IV.

How much oxygen is required to burn one liter of marsh gas, and what compounds are produced by the combustion?

V.

Correct and finish the following equations, and state which of them are analytical, synthetical, and metathetical reactions?

$Pb\ NO^3 + K\ I =$ $\qquad$ $Zn + Cl =$

$Hg\ O + Heat =$ $\qquad$ $NH_4\ NO_3 + Heat =$

$NH_4\ SO_4 + CA\ O_2\ H_2 + Heat =$

VI.

Write the graphic or structural formula for the following compounds?

Mercurous Chloride,	Ethyl Alcohol,
Calcium Hypo-Chlorite,	Hydrogen Sulphate,
Ferrans Iodide,	Ferric Hydrate,
Hydrogen Ethyl Sulphate,	Ammonium Nitrate,
Sodium Phospate,	Sulphuric Anhydride.

VII.

How much sulphuric acid is required to decompose ten grams of ferrous sulphide; and what is the volume of the gas obtained, when measured, at a temperature of 15° C, and a pressure of 758 nene.

VIII.

Give atomic weight of sulphur, its molecular weight, its equivalence, density of its vapor at 1000° C, and at 500° C.

IX.

Write typical formulas for the following compounds: Potassium Bicarbonate, Sodium Hydrate, Plumbic, Acetate, Sodium Phosphate, Magnesium Sulphate, Nitric Anhydride.

X.

1. Give process of reaction for making commercial Muriatic Acid?
2. One kilogram of salt will yield how much in grams of H Cl?
3. How much by weight in grams of chlorine does one kilogram of salt contain?
4. Calculate the percentage composition of sodium chloride?
5. 10 CC of an acid liquid yields with argentic nitrate a precipitate weighing 3,932 grams; what percentage of H Cl is contained in the liquid?

WM. T. WENZELL,
Professor of Chemistry.

MATERIA MEDICA.

1. Enumerate the official plants in the Nat. Ord. Ranunculacæ, giving the medical properties, and active principles and ordinary uses of each.
2. Give definitions of balsam of tolu and balsam of fir. In what respects do they differ from each other chemically?
3. Mention the commonest adulterations or substitutions practised with regard to saffron, olive oil, dandelion, and copaiba, with the methods of detecting them.

4. What is the difference between black and white mustard? Write out the reactions that occur in the production of the pungent principle in each, and state to which we are indebted for the volatile oil.

5. What alkaloids are found in St. Ignatius bean? Give the dose of the extract and of the officinal alkaloid.

6. What are "Sanguinaria," "Sanguinarin," and "Sanguinarina"? What is the dose of each?

W. M. SEARBY,
Professor of Materia Medica.

PHARMACY.

1. Describe the Metrical System of Weights and Measures: On what is it based? Name the units of length, weight, and capacity, their comparative value, and the names and value of the prefixes used.

2. What is the theory of the process of Displacement? Describe the apparatus best adapted, and the most suitable condition of the drug. Why are some powders required to be finer than others? Give an example.

3. What is Cellulose, and its chemical formula? Name its isomers. The effect of boiling with dilute sulphuric acid. What officinal preparation is made by the action of strong nitric and sulphuric acids upon it. Give the chemical name of the compound formed.

4. Describe Sugars, the two principal classes, a good test, and the mode of detecting sugar in urine. What sugar is employed in making Syrupus of the Pharmacopœia? The sp. gr. of sugar, and the mode of obtaining it? Give the example, taking 400 grains of sugar, which will weigh in oil of turpentine 182.5 grains.

5. What is the chemical composition of Alcohol, its uses in pharmacy? Name the officinal preparations yielded by its decomposition. How is Spiritus Ætheris Nitrosi prepared, and what are the best tests of its purity?

9. Give the general formula for preparing Fluid Extracts of the U. S. P., and the strength of the several fluid extracts. What are the advantages of this class of preparations?

What menstruums are used respectively, in preparing Ext. Buchu Fl., and Ext. Ergotæ Fluidum?

7. What is Copaiba? If adulterated with a fixed oil, how would you detect it? Name the officinal preparations of copaiba, and the mode of preparing them. What condition of the drug is essential in the formation of Pilulæ Copaibæ?

8. Describe Alkaloids. Give general tests for them, the best test for strychnia, and the outline of the U. S. P. process for preparing it. Name the officinal alkaloids and the several drugs from which they are obtained.

9. Give the officinal names and comparative strengths of all the U. S. P. preparations of Aconite.

What would you dispense for Tinctura Aconiti?

10. Write formulas for the following preparations, giving the officinal names in full for the several ingredients, and the reasons for employing the solvents used :

Tinctura Guaiaci Ammoniata.
Extractum Conii Fructus Fluidum.
Infusum Cinchonæ Rubræ.
Tinctura Opii Deodorata
Extractum Nucis Vomicæ.

EMLEN PAINTER,
Professor of Pharmacy.

BOTANY.

1. Tell the subdivisions of the Linnean Classis of Syngenesia.
2. The differences of Caulis, Calamus, and Calmus.
3. Between a pedate and a palmate leaf.
4. The four fundamental forms of a compound infloresence.
5. What is the chief characteristic of a Malvaceous Corolla?
6. Tell some forms of indehiscent fruits, and their differences.
7. The change of generation in mosses.
8. What is the prothallas of the higher Cryptogames?
9. Tell the chief divisions of Dicotyledonous plants.
10. Give the names of some officinal Papaveraceæ.

H. BEHR, M. D.,
Professor of Botany.

QUESTIONS BY COMMITTEE.

1. What are the botanical names and natural order of the trees yielding Citric Acid? Give process, chemical formula, and quantivalence. What are the sources of Tartaric Acid? Give botanical names, chemical formula, and quantivalence.

2. What are the sources whence Acetic Acid is derived? Give chemical formula and quantivalence.

3. Give process for making Nitrate of Silver, with equation.

What is Ammonio-Nitrate of Silver? Write equation, with explanation.

4. Write formulas for the following :

Ammonium alum; potassium alum; iron alum; and chrome alum. Give processes for their preparation, and state their crystalline form or forms.

5. How does moist Ferric Hydrate act on Arsenious Acid? Give a rapid method for preparing the former in an emergency.

J. CALVERT, }
C. A. BAYLY, } *Committee.*

MEMBERS OF THE SAN FRANCISCO BOARD OF PHARMACY.

JOHN CALVERT, President. WM. T. WENZELL, Secretary.
MAX. TSCHIRNER. JAS. H. WIDBER.
F. A. COLMAN.

APPENDIX.

AN ACT

[Passed by the State Legislature of 1876,]

TO AMEND AN ACT ENTITLED AN ACT TO REGULATE THE PRACTICE OF PHARMACY IN THE CITY AND COUNTY OF SAN FRANCISCO, PASSED MARCH TWENTY-EIGHTH, A. D. EIGHTEEN HUNDRED AND SEVENTY-TWO.

The People of the State of California, represented in Senate and Assembly, do enact as follows:—

SECTION 1. From and after the first day of June, A. D. eighteen hundred and seventy-six, it shall be unlawful for any person within the City and County of San Francisco to open or conduct any pharmacy or store for retailing, dispensing, or compounding medicines or poisons, unless such person be a registered pharmacist, within the meaning of this Act; and it shall be unlawful for any person within the City and County of San Francisco to compound and sell at retail any medicines or poisons, or to compound or dispense any physician's prescription, unless such person be a registered pharmacist or a registered assistant pharmacist, within the meaning of this Act, except as hereinafter provided.

SEC. 2. Any person in order to be a registered pharmacist, must be a graduate in pharmacy, a licentiate in pharmacy, or a practicing pharmacist.

SEC. 3. Graduates in Pharmacy are persons who have had four years' experience in stores where prescriptions of medical practitioners are compounded, and each must have obtained a diploma from a college of pharmacy within the United States, or from an authorized foreign institution, or Examining Board. Licentiates in pharmacy are persons who have had four years' experience in stores where prescriptions of medical practitioners are compounded, and shall have passed an examination before the Board of Pharmacy; or pharmacists who shall present satisfactory credentials or certificates of their attainments to the Board of Pharmacy. Practicing pharmacists are such persons only who, at or prior to the passage of this Act, have kept and continue to keep pharmacies in the City and County of San Francisco, for compounding and dispensing the prescriptions of medical practitioners, and for the sale of medicines and poisons. Registered assistants in pharmacy are persons of not less than eighteen years of age, who are employed by registered pharmacists, and have studied the art of pharmacy for three years, and have furnished satisfactory evidence of the same to the Board of Pharmacy, and have been registered as assistant pharmacists as hereinafter provided.

SEC. 4. The members of the California Pharmaceutical Society residing in San Francisco shall, during the month of May, eighteen hundred and seventy-two, and every third year thereafter, during the month of May, elect five of the most competent pharmacists of San Francisco to serve as a Board of Pharmacy. The members of this Board shall, within thirty days after their appointment, individually take and subscribe before the County Clerk, an oath, faithfully and impartially to discharge the duties prescribed by this Act. They shall hold office for the term of three years,

and until their successors are appointed and qualified; and in each case of vacancy the said Board of Examiners shall elect from three nominees selected at a meeting of the said society. The Board shall organize for the transaction of business in the City of San Francisco by the election for the whole term, of President and Secretary. Three members of the Board shall constitute a quorum. They shall meet at least quarterly, and have power to make by-laws, for the proper fulfillment of their duties. The duties of this Board shall be to transact all business pertaining to the legal regulations of the practice of Pharmacy and the retailing of poisons, and to examine and register as pharmacists, or assistant pharmacists, all applicants whom it shall deem qualified to be such, respectively. All persons applying for examination shall pay to the Secretary a fee of five dollars; and on passing the examination shall be furnished with a certificate signed by the President and examiners.

SEC. 5. It shall be the duty of the Secretary to keep a book of registration open at some convenient place of which due notice shall be given through the public press, in which shall be entered, under the supervision of the Board, the names, titles, qualifications, and places of business of all persons coming under the provisions of this Act; and it shall be the duties of all such persons to appear before the Board of its Secretary, within a period of thirty days after its organization, and be registered. The fee for the first registration of graduates, licentiates, and practicing pharmacists, shall be two dollars; for assistants one dollar. It shall be the duty of every person registered to have his registration renewed every year, in the month of January, the fee for which shall be one dollar; and upon changing his place of business or engagement to notify the Secretary within thirty days. The Secretary shall make all necessary alterations in the register, and notify all persons, on or before the tenth day of February, who shall not have renewed their registration, for which notification the Secretary shall receive a fee of fifty cents; and in case no answer is received within fourteen days such name shall be erased unless an excuse satisfactory to the Board be presented: *provided always*, that the said name shall be restored on payment of fifty dollars to the Secretary of the Board within one year. The Secretary shall give receipts for all moneys received by him, and pay said moneys to the Treasurer of the California Pharmaceutical Society, taking his receipt therefor. The salary of the Board of Pharmacy and of the Secretary shall be fixed by the Board of Directors of the California Pharmaceutical Society, to be paid out of the registration fees and fines.

SEC. 6. From and after the first day of June, eighteen hundred and seventy-six, every registered pharmacist who shall knowingly intentionally, and fraudulently adulterate, or cause to be adulterated, any drugs, chemicals, or medicinal preparation, shall be held guilty of a misdemeanor, and on conviction shall be fined fifty dollars in the first, one hundred dollars in the second, and on conviction in the third case, his name shall be erased from the register.

SEC. 7. *And be it further enacted*. That on and after the first day of June, eighteen hundred and seventy-six, it shall be unlawful for any person in the City and County of San Francisco to retail any poisons enumerated in Schedules "A" and "B," appended to this Act, without distinctly labelling the bottle, box, vessel, or paper, and wrapper or cover in which said poison is contained, with the name of the article, and the word "Poison," and the name and place of business of the seller. Nor shall it be lawful for any person to sell or deliver any poison enumerated in Schedules "A" and "B" to any person, unless, on due inquiry, it is found that the person is aware of its poisinous character; and that it is to be uaed for a legitimate purpose. Nor shall it be lawful for any person to sell or deliver any poison included in Schedule "A," without, before delivering to the buyer, making, or causing to be made, an entry in a book kept for that purpose only, stating the date of sale, the name and address of the purchaser, the name and quantity of the poison sold, the purpose for which it is stated by the purchaser to be required, and the name of the dispenser; said book to be always open for inspection by the proper authorities, and to be preserved for at least five years. The provisions of this section shall not apply to the dispensing of poisons (in not unusual doses or quantities) upon the prescriptions of practitioners of medicine.

SEC. 8. Any person who shall attempt to procure registration for himself or for any other person, under this Act, by making or causing to be made, any false representations, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be fined in a sum not exceeding five hundred dollars. Any registered pharmacist who shall permit the compounding and dispensing of prescriptions of medical practitioners in his store by persons not registered, except by junior assistants under the direct supervision of registered persons; or any person not registered who shall retail or dispense medicines or poisons, except in a pharmacy, under the supervision of a registered pharmacist or a registered assistant pharmacist, or who shall fraudulently represent himself to be registered, and any registered person who shall fail to

comply with the regulations of this Act, in regard to the retailing and dispensing of poisons, shall, for every such offense, be deemed guilty of a misdemeanor, and on conviction thereof be fined not exceeding five hundred dollars.

SEC. 9. One-half of all fines imposed for violations of this Act shall be paid to the Secretary of said Board, and it shall be the duty of said Secretary, after paying all the necessary expenses of said Board, to pay over any surplus money to the Treasurer of the California Pharmaceutical Society.

SEC. 10. All persons registered under this Act shall be exempt and free from all jury duty in the City and County of San Francisco.

SEC. 11. All Acts and parts of Acts in conflict with the provisions of this Act, in so far as they so conflict, are hereby repealed.

SCHEDULE A.

Arsenic and its preparations, corrosive sublimate, white precipitate, red precipitate, biniodide of mercury, cyonide of potassium, hydrocyanic acid, strychnia, and all other poisonous vegetable alkaloids and other salts; essential oil of bitter almonds; opium and its preparations, except paregoric and other preparations of opium containing less than two grains to the ounce.

SCHEDULE B.

Aconite, belladonna, colchicum, conium nux vomica, henbane, savin, ergot, cotton root, cantharides, digitalis, and their pharmaceutical preparations; croton oil; chloroform, chloral hydrate, sulphate of zinc, sugar of lead, mineral acids, carbolic acid, and oxalic acid.

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UNIVERSITY OF CALIFORNIA.

SESSION OF 1884.

Commencing Monday, April 7th.

FACULTY.

WILLIAM T. WENZELL, M. D., Ph. G.
Professor of Chemistry, 19 Drumm St.

EDWARD W. RUNYON, Ph. G.,
Professor of Pharmacy, 529 and 531 Market Street.

HERMANN H. BEHR, M. D.,
Professor of Botany, 34 Ellis St.

WILLIAM M. SEARBY, Ph. G.,
Professor of Materia Medica and Elementary Botany, and Dean of the Faculty.
Office, 859 Market St., San Francisco.

TEXT BOOKS.

U. S. Pharmacopœia, 1880.
Organic Materia Medica, by J. M. Maisch.
U. S. Dispensatory, by Wood & Bache.
Parrish's Practical Pharmacy.
Thomé's Botany.
Behr's Flora.
Muter's Pharmaceutical and Analytical Chemistry.

REFERENCE BOOKS.

National Dispensatory, by Stillé & Maisch.
Pereira's Materia Medica.
Attfield's Pharmaceutical Chemistry.
Fownes' Chemistry.
Roscoe's Elementary Chemistry.
Proctor's Lectures on Practical Pharmacy.
Gray's Lessons in Botany.
Gray's How Plants Grow.
Pharmacographia, Fluckiger & Hanbury.

The Faculty and Board of Trustees take pleasure in again referring to the continued prosperity of the California College of Pharmacy.

In spite of our isolated situation on the western edge of the Continent, and notwithstanding the fact that the Preliminary Examination has sifted out such applicants as were not adapted, from the want of a sufficient general education, to enter the Senior Class, the number of students has steadily increased. It will be remembered that the Preliminary Examination has, for the last two years, been included in the Junior Examination which is held at the close of the first session. This has now been changed, and the passing of the Preliminary or Matriculation Examination will be necessary before admission to the College.

A very important change has also been made in the work of the Faculty. Hitherto the Students have heard lectures on the same, or nearly the same, subjects during each year of their attendance. In future there will be special Elementary Lectures for the Junior, and more advanced ones for the Senior Class.

The New College Building is a matter of pride and satisfaction to all who are interested in Pharmaceutical Education on the Pacific Coast, and as intending Students may not have read the description of it published after its completion, it is here reprinted.

The building is situated on Fulton Street, west of Polk, and though not large, provides sufficient accommodation for the College for some years to come. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the Professors ; back of these is the Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory of the same size. On the same floor are three rooms, designed for the use of the Adelphi Society (an association of the students for mutual help in their studies), for meetings of committees and for other purposes. The third story consists of a small dwelling of five rooms, where the curator resides. As it was necessary to exercise economy in the expenditures, there has been no attempt to produce an ornamental edifice, and the Trustees believe that for the comparatively small outlay (about $6,000), the structure is exceedingly well adapted to the requirements of the College and Society.

THE LECTURES

Will be delivered in the hall of the College of Pharmacy, 113 Fulton street, between Polk and Van Ness Avenue, on Monday, Wednesday and Friday evenings, with daylight demonstrations in Botany on Tuesdays, from 11:30 A.M. to 12:30 P.M. ; commencing Monday, April 7th, and terminating about the end of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

CHEMISTRY.

Professor William T. Wenzell, M. D., Ph. G.

The lectures for the junior class will be delivered on Mondays, at 7:30 P.M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, in which will be included, the electro-chemical theory, the equivalences of atoms and radicals, chemical notation and nomenclature and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmacal student.

The lectures to the senior class will be delivered on Wednesdays, at 8:30 P.M.

In the senior course the student will be instructed in the more advanced departments of chemical philosophy : specific heat, molecular physics, the atomic theory, the atomicities of elemental molecules, crystallography, stoechiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives: the alcohols, ethers, acids, glucosides, alkaloids, &c., will receive their due share of attention, elucidated with typical and graphic formulas.

MATERIA MEDICA AND BOTANY.

Professor W. M. Searby, Ph. G.

Lectures to the junior class on Mondays, at 8:30 P.M., and to the senior class on Fridays, at 7:30 P.M.

JUNIOR COURSE.—The lectures on botany from this chair will be elementary, being delivered to the junior class only, and designed as preparatory to the better apprehension of the advanced lectures on botany, and the course on materia medica. The students will be taught to dissect living plants, of which an abundance is at all seasons available, and will be instructed in regard to their structure and morphology. The development and functions of the various parts and organs will be described, as well as their position, diversities of form, arrangement, &c.

An outline of botanical classification will then be given, in which will be shown the botanical affinities of the substances included in vegetable materia medica.

The origin and commercial history of each drug will conclude this course.

SENIOR COURSE.—Drugs derived from the animal kingdom will be first treated of, followed by a systematic study of those from the vegetable world. Each drug will be fully described as to its physical properties and internal structure, attention being called to those characters which indicate inferior or superior quality, and also to those which are of special importance as a means of identifying each particular drug, or of detecting adulterations and substitutions. The chemical constituents, whether medicinal or otherwise, will form an important feature in this course, and so occupy a large share of attention. The medical properties and doses will also be noted, as well as the antidotes to such as are poisonous.

The lectures throughout will be illustrated by specimens specially selected as illustrative of noteworthy characteristics ; also by plates, charts, &c.

THEORY AND PRACTICE OF PHARMACY.

Professor Edward W. Runyon, Ph. G.

Lectures to the Junior Class on Wednesdays, at 7:30 P.M., and to the Senior Class on Fridays, at 8:30 P.M.

The Junior Course of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms and a review of the history of the United States Pharmacopœia, as well as a consideration of text-books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France and Germany, also Specific Gravity, and the means and apparatus necessary for its determination, will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical operations, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected; the principles of solution, filtration, clarification and decoloration, neutralization, crystallization, precipitation and dialysis; following this, the important subjects of digestion, infusion, maceration, percolation and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

The Senior Course of Pharmacy Lectures will treat directly and systematically of the preparations of the Pharmacopœia, bringing in, from time to time, those principles that are taught in the Junior Course, and which are so necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture and employment, the adulterations and sophistications to which they are subject, and the methods of their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration, will be brought into use, and every effort made to familiarize the student with the subject under consideration. One or two lectures will be given upon the important subjects of toxicology

and examination of urine; also upon the testing of Pharmacopœial preparations by means of test and volumetric solutions.

The lecturer has made arrangements with the several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refinery, drug mills, etc., to accompany the Senior Class of students, where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize the student with matters which can be only imperfectly explained in lectures and text-books.

BOTANY.

Professor Hermann H. Behr, M. D.

The lectures will be delivered every Tuesday, at 11:30 A. M.

These lectures, designed only for the Senior Class, include the Geography of Plants, and Structural, Functional and Systematic Botany, with Microscopic Demonstrations.

In addition to these weekly lectures, excursions will be made into the country on alternate weeks during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

SCHEDULE OF LECTURES, ETC.

MONDAY.		WEDNESDAY.		FRIDAY.	
7:30	Chemistry. Juniors.	7:30	Pharmacy. Juniors.	7:30	Materia Medica. Seniors.
8:30	Materia Medica. Juniors.	8:30	Chemistry. Seniors.	8:30	Pharmacy. Seniors.

Tuesday, 11:30 A.M , Botany, Seniors.

BOTANICAL EXCURSIONS for Senior Students, with Professor Behr, on alternate Sundays, and for Juniors, with Professor Searby, on alternate Thursdays.

THE LATIN CLASS will meet at hours most convenient to those who may join it, to be determined after the class has been formed.

THE EXAMINATIONS.

IMPORTANT NOTICE TO STUDENTS.

The Preliminary Examination, which has hitherto formed a part of the Junior Examination, will henceforth be held previous to the opening of the Lecture Course. Students desiring to attend the Junior Course will, therefore, present themselves for examination, at the college, on Friday, April 4th, at 10 A. M. Those who hold certificates showing that they have passed the first grammar grade, and are entitled to enter the High Schools of this State, will not be required to undergo this examination. Students who do not present such certificates, will be examined in English reading and composition, writing, geography and arithmetic.

JUNIOR CLASS.

All the members of the Junior Class will be examined at the end of the session, in the elements of Latin, Reading and Translation of Latin Recipes, Elements of Chemistry, Structural Botany, Identification and History of Drugs, and the Weights, Measures and Preparations of the United States' Pharmacopœia. All who pass a satisfactory examination will be entitled to admission into the Senior Class.

SENIOR CLASS.

The Senior Class will be examined, at the end of the session, for the Degree of Graduate in Pharmacy, in Chemical Synthesis and Analysis, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters of Drugs, their doses and uses, Theoretical and Practical Pharmacy, and the Translation of Recipes from Latin into English, and from English into Latin. The Practical Examination will include the actual Compounding of Prescriptions, and the manipulation of Drugs and Chemicals, in presence of the examiners.

PRIZES.

Three prizes will be awarded to the students who pass the most satisfactory and complete examinations in all the branches at the close of the term.

To Graduates.—The first prize will be the Gold Medal of the College; the second, presented by Professor W. M. Searby, Books or Apparatus to the value of twenty dollars.

To Juniors.—The Trustees will present tickets for the second year's course to the student who shall pass the best examination.

Conditions of Graduation.

Every person upon whom the Diploma of Graduate in Pharmacy shall be conferred, must be of good moral character, shall have attained the age of 21 years, and attended two full courses in each of the departments of this college, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had four years' experience in a Pharmacy where prescriptions are compounded. No special examination will be held for candidates for the Degree, but only one examination at the end of the regular course.

THESES.

Each candidate must present an original Thesis, written on Thesis paper, in English, in his own handwriting, and also pass his examination in English. The *Titles* or *Subjects* of Theses must be sent to the Dean of the Faculty, on or before the first day of June, to be approved or rejected by the Trustees and Faculty. The Thesis must be completed and handed to the Dean on or before the first day of September.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the Degree is conferred (the College of Pharmacy being affiliated with the University).

NEW RULES,

Of special interest to students employed in wholesale drug houses and manufacturing establishments, have been adopted, with the hope that many young men so engaged will avail themselves of the course of study offered by the College of Pharmacy to make themselves familiar with matters which are of daily use in their several vocations, and their attention is particularly asked to the next article.

Certificates of Proficiency.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy and Botany will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy, except that no student will be examined *in Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded.

The time actually spent in attendance at Lectures in this college (that is to say, the Lecture seasons) will be considered as a part of the term of service.

Certificates of Proficiency for successful candidates under 21 years of age, for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica or Botany, must be paid for at the rate of two dollars each.

To Students of the Class of 1883.

As the rule requiring three and a half years' experience before the final examination has not hitherto been strictly enforced in all cases, students of the class of 1883 may be examined in all the branches, and receive certificates if successful. Henceforth the rule will be rigidly observed.

To Students from other Colleges of Pharmacy.

The cases of Junior Students from other colleges will be separately considered by the Board of Trustees.

FEES, ETC.

JUNIOR YEAR.

Matriculation Ticket	$ 2 50
Lecture Tickets	45 00

SENIOR YEAR.

Lecture Tickets	$55 00
Diploma Fee	10 00
Certificate of Proficiency	2 00

Senior students are required to take a course in systematic Botany, the fee for which is $10. The price of tickets to the other three chairs is $15 each. The Diploma fee is to be paid when the candidate presents himself for examination for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

The Matriculation and Lecture Tickets must be taken out by each student in person, and must be endorsed by the several professors, the former within fifteen, and the latter within thirty days, from the beginning of the lecture course.

Members and Graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the departments of the University of California, and in the Medical College of the Pacific, will be admitted to the lectures by matriculating and paying only for the matriculation ticket.

Other Students, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

BOARD AND LODGING.

Good Board and Lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound, in which good meals can be had for from 25 cents to 50 cents. Single furnished rooms may be had, without board, for from $5.00 to $10.00 per month.

SITUATIONS.

Temporary situations whilst attending college may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of students who desire situations.

MEDICAL COLLEGES.

In answer to an application to the Faculties of the Medical Department of the University of California, and of the Cooper Medical College, the Trustees of the College of Pharmacy have received replies, to the effect that Graduates of Pharmacy will be permitted to become candidates for the Degree of Doctor of Medicine by attending lectures, etc., for two years, instead of three years. The fees for Graduates of Pharmacy have also been reduced in the same proportion by both the schools of medicine.

LIST OF GRADUATES.

Name.	Date of Graduation.	Thesis.
ADAIR, WM. H.	1881	Extract of Malt
ARGENTI, J. J. B.	1881	The Olive and its Product
BACON, GASTON E.	1875	Analysis of Tincture of Opium
BARBAT, J. H.	1880	Taraxacum Leaves and Root
BAUER, FRED C.	1877	Analysis of Well Water
BALL, ROBERT L.	1882	Bitter Bark from San Salvador
BECKETT, F. ARTHUR.	1883	Hydrobromic Acid
BURNETT, G. G.	1879	Rhamnus Purshiana
BARRINGTON, CHAS. L.	1882	Vitis Vinifera
CHARD, GEO. R.	1881	Iodoform
CODY, NELSON A.	1881	Croton Procumbens
CURRAGH, JOHN M.	1877	Damiana
CALEGARIS, JOSEPH.	1882	Punica Granatum
DEVINE, JOHN.	1877	Seidlitz Powders
DeWITT, JAMES M.	1881	Pharmaceutical Ethics
DIGNAN, MICHAEL H.	1883	Anal. of a Sulphuretted Mineral Water
DUBOIS, PAUL A.	1880	Grindelia Robusta
D'ARTENAY, EUGENE.	1882	Berberis Aquifolium
ELWERT, CHAS. P.	1881	Gelsemium Sempervirens
FEVRIER, J. P.	1881	Jaborandi
FITZELL, CHARLES R.	1883	Humulus Lupulus
FLETCHER, DAVID.	1881	Assays of Cinchona Bark
GOVE, D. M.	1881	A well-arranged Pharmacy
GRAHAM, THOMAS D.	1875	Oxytropis Campestris
GRAZER, F. A.	1880	Berberis Aquifolium
GREEN, FRANKLIN T.	1882	Analysis of Well Water
*GREEN, JOHN A.	1883	Melaleuca Hypericifolia
HAMMIT, CHAS. H.	1881	Analysis of Piedmont Spring Water
HARRIS, HENRY R.	1876	Hydrocyanic Acid
HELKE, W. S.	1878	Erythroxylon Coca
HEANY, J. P.	1874	Oreodaphne Californica
HULTING, B. F.	1880	Arctostaphylos Glauca
HURTZIG, W. F. N.	1881	Chloroform
HAPPERSBERGER, EMIL.	1882	Cinchona Culture in California
JONES, MORGAN L.	1883	Agave Americana
JOY, EDWIN W.	1878	Fluid Extracts by Re-percolation
JUDSON, RUSSELL H.	1882	Carica Papaya
KAHN, ADOLPH J.	1875	Pharmaceutical Education
*KORPER, HARRY W.	1883	Boldoa Fragrans
LENGFELD, FELIX.	1880	Assays of Opium

Name.	Date of Graduation.	Thesis.
LESZYNSKY, SAM'L	1880	Peptone
LINDSAY, FREDERICK G	1883	Schinos Molle
LUSTIG, DANL. DAVID	1881	Heteromeles Arbutifolia
MATHEWSON, J. McL	1879	Mitchella Repens
McDONNELL, S. A	1878	Dialysed Iron
†McLEAN, F. P	1875	Analysis of Magnesites
McLAUGHLIN, W. H	1878	Eriodictyon Glutinosum
MERVY, EMILE C	1879	Lupinus Chamissonis
MESSING, L. J	1879	Eucalyptus Globulus
MEYERS, ROB'T C	1875	Sesame Oil and its Uses
MINOR, GEO. W	1879	Larrea Mexicana
MORRISON, W. P	1880	Table of Solubilities
MOORE, BERKLEY W	1883	Pyrethrum Cinerariæfolium
MOORE, C. C	1878	Analysis of Soil
MURPHY, MARTIN J	1881	Amygdalus Communis
OBERDEENER, SAM'L	1880	Pharmaceutical Notes
PARKER, E. S	1878	Aspidium Argutum
RAY, FRED E	1876	California Opium
*REILLY, PAUL H	1883	Tannic Acid
RIMPAU, FRANK T	1883	An Assay of Ore
ROGERS, NATHAN	1876	Sium Latifolium
ROTURIER, EMILE	1883	Piperidine
SCHOLL, A. L	1881	Zygadenus Fremontii
SELZER, EDWARD	1877	Percolation *vs.* Maceration
SKINNER, ROBERT W	1883	Semen Bardanæ
SMITH, ARTHUR H	1879	Fucus Nodosus
SOMMER, ADOLPH	1879	Calcium Cyanide
TROPPMAN, CHAS. M	1881	Rhododendron Occidentale
TRYON, JAS. W	1882	Mimulus Glutinosus
†VREELAND, PH. L	1879	Syrupus Ferri Iodidi
YOUNG, WILFRED M	1882	Megarrhiza Californica
*WALL, HENRY A	1883	Erythroxylon Coca
WEISS, PHILIP	1878	Leeches
WIGHT, DAVID	1882	California Drug Law
ZEMANSKY, J. H	1878	Nicotiana Tabacum

*Certificate of Proficiency.

†Deceased.

CLASS OF 1883.

Name.	Nativity.	Preceptor.
ARGENTI, FRANCIS W. D.	California	J. H. Dawson
BARBAT, JOSEPHINE EUGENIE	California	J. H. Barbat
BEAIZLEY, GEORGE THEOPHILUS	Australia	W. M. Searby
BESTHORN, HENRY E. D.	Germany	E. W. Runyon
BECKETT, FREDERICK ARTHUR	Canada	E. W. Runyon
BOYNTON, JOHN MORRISON	California	W. J. Bryan
CREW, HENRY WILLIE	California	Steylaars & Rossi
CRANE, CHARLES WALTER	California	Langley & Michaels
DICK, WILLIAM HENRY	California	Leipnitz & Co.
DONAHUE, HENRY	Ohio	H. B. Shaw
DUNNING, TERENCE	California	W. H. McLaughlin
DORRANCE, RALPH GREGORY	Michigan	N. S. Thompson
DIGNAN, MICHAEL HENRY	California	Ellert & Co.
DAVIES, GEORGE WILLIAM	California	E. L. Mulligan
EMMAL, WILLIAM BOON	California	John Devine
EAGEN, HENRY JEROME	California	Redington & Co.
FROST, ARTHUR HENRY	California	W. J. Bryan
FRIEDHOFER, WILLIAM	California	C. A. Bayly
FITZELL, CHARLES RICHARD	Iowa	Blakeslee & Weck
GREEN, JOHN ALBERT	California	W. T. Wenzell
HUGHES, SAMUEL FREDERICK	Pennsylvania	Redington & Co.
HUGHES, THOMAS HEUSTON	California	J. R. Gates & Co.
HENDERSON, DAVID LONDON	England	G. G. Burnett
HOWARD, KATE IRIS	New York	Medical Student
IVES, HENRY Le GRAND	New York	W. B. Pixley
JONES, MORGAN LEWIS	Wales	Steylaars & Rossi
KELLY, FRANK STANISLAUS	California	H. B. Slaven
KORPER, HARRY WASHINGTON	Maryland	W. P. Morrison
KRAUSE, FREDERICK LOW	California	Redington & Co.
LEBER, ALBERT LOUIS	Illinois	Morgan & Co.
LOEHR, GEORGE WILLIAM	California	P. Flatow
LEVISON, CHARLES GABRIEL	Nevada	C. G. Strong
MOODY, MARY, M. D	California	Medical Student
MARTIN, WILLIAM HENRY	New Zealand	W. J. Bryan
MOORE, BERKLEY WILLIAMS	California	E. Painter
MUNSON, JAMES GRANT	California	W. M. Searby
MEYER, AUGUST WILLIAM	Illinois	M. M. Ward
MOLONY, EDWARD JAMES	California	Stoddart Bros.
NEWBY, THOMAS SHERIDAN	Missouri	T. M. Edwards
NORDECK, PAUL VON	Germany	W. T. Wenzell

Name.	Nativity.	Preceptor.
OBERDEENER, GEORGE	California	F. Grazer
OSGOOD, HOWARD LINCOLN	California	Wakelee & Co.
ORENA, ARTHUR GASPAR	California	H. B. Slaven
PARKER, JAMES PLEASANT	Alabama	Medical Student
REILLY, PAUL HERON	California	P. J. Reilly
RIXFORD, EMMET HAWKINS	Vermont	Special Student
ROTURIER, EMILE FREDERICK	California	Chs. Roturier
ROETHE, CHARLES HENRY	California	C. Roethe
RUIZ, LOUIS FELIPE	California	A. M. Ruiz
RIMPAU, FRANK THEODORE	California	Preuss & Pironi
SANBORN, BENJ. FRANKLIN	Illinois	Medical Student
SKINNER, ROBERT WILSON	Iowa	A. M. Kurtz
SEARBY, FREDERICK WRIGHT	British Columbia	W. M. Searby
SCHUMACHER, JOHN HENRY	California	J. A. Bauer
STEINMETZ, FRANK JACOB	California	W. E. Fifield
STECHER, EDWARD	California	B. Broemmel
SAMUELS, DAVID GEORGE	New Zealand	A. Evans
TJADER, CURRY WALDREN	Nevada	F. C. Keil
TOPLEY, JAMES HENRY	California	Jas. Topley
WHITNEY, WILLIAM BENJAMIN	Maine	Blakeslee & Weck
WOODS, Mrs. W. E. JOSEPHINE	Belgium	Medical Student
WALL, HENRY ALOYSIUS	Washington Territory	E. W. Runyon
WALCH, ANDREW DESMOND	California	W. Frisbie
ZWEYBRUCK, FREDERICK	California	E W. Runyon

UNIVERSITY OF CALIFORNIA.

DENTAL DEPARTMENT.

Cor. Stockton and Francisco Sts.

FACULTY.

WILLIAM T. REID, A. M.,
President of the University, and ex-officio President of the Faculty.

A. F. McLAIN, D. D. S.,
Professor of Pathology and Therapeutics.

S. W. DENNIS, M. D., D. D. S.,
Professor of the Principles and Practice of Operative Dentistry and Dental Histology.

C. L. GODDARD, A. M., D. D. S.,
Professor of Mechanical Dentistry.

M. W. FISH, M. D.,
Professor of Physiology.

W. E. TAYLOR, M. D.,
Professor of the Principles and Practice of Surgery.

A. L. LENGFELD, M. D.,
Professor of Chemistry and Materia Medica.

WILLIAM B. LEWITT, M. D.,
Professor of Anatomy.

DEMONSTRATORS.

M. J. SULLIVAN, D. D. S.,
Demonstrator of Operative Dentistry.

Assistant Demonstrator of Operative Dentistry.

E. O. COCHRANE, D. D. S.,
Demonstrator of Mechanical Dentistry.

Assistant Demonstrator of Mechanical Dentistry.

WILLIAM B. LEWITT, M. D.,
Demonstrator of Anatomy.

E. O. COCHRANE, D. D. S.,
Demonstrator of Continuous Gum Work.

M. J. SULLIVAN, D. D. S.,
Demonstrator of Salivary Analysis.

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CLINICAL INSTRUCTORS.

BLISS, F. W., D. D. S.
DAVIS, H. C., D. D. S.
DUNBAR, L. L., D. D. S.
DAVIS, I. W.
GILMAN, M. S.
HENDERSON, R. W.
KINGSBURY, W. B.
KNOX, H. E., D. D. S.
MORFFEW, THOS.
PLOMTEAUX, H. J., D. D. S.
PRICE, W. E., D. D. S.
SICHEL, MAX.
STANLEY, W. H., D. D. S.

For particulars, address

S. W. DENNIS, M. D.,
Dean of the Faculty,
330 Sutter Street, S. F.

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1885

THIRTEENTH ANNUAL ANNOUNCEMENT

— OF THE —

CALIFORNIA

COLLEGE OF PHARMACY,

113 FULTON ST., SAN FRANCISCO.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

SESSION OF 1885,

COMMENCING MONDAY, APRIL 6TH.

Alumni of this College and others who wish to receive the Announcement are requested to forward their Names and Addresses to the Dean.

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ANNOUNCEMENT

—OF THE—

THIRTEENTH ANNUAL SESSION

—OF THE—

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CALIFORNIA COLLEGE OF PHARMACY.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

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OFFICERS

OF THE

CALIFORNIA COLLEGE OF PHARMACY.

PRESIDENT :

WILLIAM M. SEARBY.

VICE-PRESIDENTS :

HENRY MICHAELS. ADOLPH SOMMER.

SECRETARY :

FREDERICK GRAZER.

TREASURER :

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FREDERICK GRAZER, VALENTINE SCHMIDT,
WILLIAM M. SEARBY.

FACULTY

OF THE

CALIFORNIA COLLEGE OF PHARMACY.

WILLIAM T. REID, A.M.,
President of the University of California.

WILLIAM T. WENZELL, M.D., Ph.G.,
Professor of Chemistry,
No. 19 Drumm Street.

HERMANN H. BEHR, M.D.,
Professor of Botany,
No. 509 Kearny Street.

FREDERICK GRAZER, Ph.G.,
Professor of Materia Medica,
113 Fulton Street.

EDWARD W. RUNYON, Ph.G.,
Professor of Theory and Practice of Pharmacy,
Dean of the Faculty,
Nos. 529 and 531 Market Street.

QUIZ MASTERS.

CHEMISTRY, ...	F. LENGFELD, Ph.G.
PHARMACY, ...	F. A. BECKETT, Ph.G.
MATERIA MEDICA, ...	J. J. B. ARGENTI, Ph.G.
BOTANY, ...	J. J. B. ARGENTI, Ph.G.

INSTRUCTOR IN LATIN.

A. A. D'ANCONA, A.B., M.D.

NOTICE.

In presenting the Announcement of the lecture term of the California College of Pharmacy, the Faculty and Board of Trustees invite attention to the advances which are being made from time to time in course of instruction here given.

The Preliminary Examination, which was held last year for the first time before admitting students to the College, is fully recognized as a step in the right direction. The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one of whose fitnesss there can be a reasonable hope. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have the necessary common-school education to enable them to take up with profit the more advanced studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to attain the proper education, employers should insist upon their making up the deficiency in this respect without delay. As young men are recommended not to enter the college until they are eighteen years of age, those who intend to make pharmacy their vocation should use their spare time before they reach that age in obtaining, at least, a good common-school education, if they have not already done so. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. They should also master the rudiments of Latin, so that, if possible, they may not need to devote any time during lecture-term to this subject. As yet, however, the Trustees do not insist upon students passing an examination *in Latin* previous to entering the College, though probably they will do so in a few years. In the mean time an Instructor in Latin has been appointed, the attendance upon this class being optional. This position will be very ably filled, as last year, by A. A. D'Ancona, A.B., M.D., whose experience as a teacher in our public schools and whose acquaintance with pharmaceutical Latin give him exceptional fitness for the office. Young men in drug stores, whether students of the College or not, are advised to join his class, if they

have not already acquired a sufficient knowledge of Latin, and pharmacists in this city will do well to direct the attention of their employés to this opportunity.

The complete division of the students into two classes, a Junior and Senior, which has been in operation the past two years, has proved very beneficial, though adding greatly to the labors of the Faculty. The Trustees believe that the more fully they can carry out a graded system of instruction, the better it will be for the students. The Modified Examinations now provided for will enable some who may be willing to take three or four years to complete their college course, to divide their studies as may best suit their circumstances.

A system of periodical examinations was inaugurated last year with great advantage to the classes. This year these examinations will be held monthly during the lectures, and the Faculty will be assisted in conducting them by four Committees of the Board of Trustees—one for each chair. This plan is adopted with the hope that it will stimulate earnest, systematic study from the very opening of the term to its close.

On the recommendation of the Alumni Association of this College, the Trustees have appointed a "Quiz-Master" for each chair, to assist the students in reviewing the lectures of the several Professors. Such reviews, when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment, as well as the profit, of associated study.

A change will be noticed in the chairs of Materia Medica and Botany. The retirement of Professor Searby on account of needed rest left the chair of Materia Medica and Elementary Botany vacant. Professor Behr again resumes the chair of Elementary Botany, in addition to the more advanced branches of that science, and Professor Frederick Grazer, Ph.G., has been assigned to the chair of Materia Medica. The Trustees consider it a matter of congratulation that the College has been able to find one of its own graduates so competent to fill the position as Professor Grazer, and whose appointment gives so much promise of proving satisfactory.

Contrary to the custom in Eastern and Western Colleges of Pharmacy, the lectures of this College are delivered in the summer months. This enables the Professor of Botany to give his instructions by demonstrations in Field Botany at the same time as the other lectures are given. It is the season when business in this city is lightest, thus

rendering it more easy for clerks to find time to attend lectures and to study at home.

San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, its Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and here is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

The New College Building is a matter of pride and satisfaction to all who are interested in Pharmaceutical Education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is situated on Fulton Street, west of Polk, and though not large, provides sufficient accommodation for the College for some years to come. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the professors ; back of these is a Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory of the same size. On the same floor are two rooms used by students in their various classes ; also for meetings of committees and for other purposes. The third story consists of a small dwelling of five rooms, where the Curator resides. As it was necessary to exercise economy in the expenditures, there has been no attempt to produce an ornamental edifice, and the Trustees believe that for the comparatively small outlay (about $6,000), the structure is exceedingly well adapted to the requirements of the College and Society. Considerable additions were made to the Museum the last year, partly by purchase and partly by donation, including a large number of Materia Medica specimens.

ANNOUNCEMENT.

PRELIMINARY EXAMINATION.—MATRICULATION.

Every applicant for admission to the regular course for graduation at this college will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography and arithmetic.

Candidates will therefore be at the college on

FRIDAY, APRIL 3D, AT 9 A. M.,

for the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above-mentioned branches.

PERIODICAL EXAMINATIONS DURING THE SESSION.

Last session the system of written examinations at stated intervals adopted by this College was found highly beneficial. These examinations will take place monthly, in each of the subjects lectured upon by the several professors, and quarterly in the reading and translating of Latin prescriptions.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees; and the average ratings of students as shown by the results thus obtained will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

THE LECTURES

Will be delivered in the hall of the College of Pharmacy, 113 Fulton Street, between Polk and Van Ness Avenue, on Monday, Tuesday and Friday evenings, with daylight demonstrations in Botany on Tuesdays and Thursdays, from 11.30 A. M. to 12.30 P. M., ; commencing Monday, April 6th, and terminating about the end of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M.D., PH.G.

The lectures to the Junior Class will be delivered on Fridays, at 7.30 P. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, in which will be included the electro-chemical theory, the equivalences of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmacal student.

The lectures to the Senior Class will be delivered on Tuesdays at 7.30 P. M.

In the Senior course the student will be instructed in the more advanced departments of chemical philosophy : specific heat, molecular physics, the atomic theory, the atomicities of elemental molecules, crystallography, stoechiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives : the alcohols, ethers, acids, glucosides, alkaloids, &c., will receive their due share of attention, elucidated with typical and graphic formulas.

MATERIA MEDICA.

PROFESSOR FREDERICK GRAZER, PH.G.

The lectures will be delivered to the Juniors every Monday, at 7.30 P. M.; the Seniors every Tuesday, at 8.30 P. M.

The lectures on Materia Medica are devoted to those substances, chiefly of vegetable origin, which are used in medicine, and which are included under the general designation of drugs.

These articles are studied in a systematic manner, notice being taken of the sources from which they are derived, their natural and commercial history, principal constituents, and remedial qualities. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration.

The students are instructed as to the proper time for collecting the various vegetable products, as well as the best modes of preserving them. Attention is called to their physical properties, as met with in trade, and to the leading characteristics of each drug. Substitutions, adulterations, and natural impurities, with the methods of detecting the same, are duly considered, as also the distinguishing features observed in articles of superior and inferior quality. The use of the microscope is shown as a means of identifying different drugs, and of detecting adulterations.

BOTANY.

HERMANN H. BEHR, M.D.

The lectures will be delivered on Tuesday and Thursday of each week, at 11.30 A. M. The lectures will include elementary, structural and systematic botany, and the geography of plants. In addition to these weekly lectures, excursions into the country will be made every fortnight during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

For those students having especial interest for botany, lectures and excursions will begin on February 17th, for much of the Flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

Theory and Practice of Pharmacy.

Professor Edward W. Runyon, Ph.G.

Lectures to the Junior Class on Mondays, at 8.30 P.M., and to the Senior Class on Fridays, at 8.30 P.M.

The Junior Course of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms, and a review of the history of the United States Pharmacopœia, as well as a consideration of text-books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France, and Germany—also Specific Gravity, and the means and apparatus necessary for its determination—will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical operations, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional, and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected; the principles of solution, filtration, clarification, and decoloration, neutralization, crystallization, precipitation, and dialysis; following this, the important subjects of digestion, infusion, maceration, percolation, and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

The Senior Course of pharmacy lectures will treat directly and systematically of the preparations of the Pharmacopœia, bringing in, from time to time, those principles that are taught in the Junior Course, and which are so necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture, and employment, the adulterations and sophistications to which they are subject, and the methods of their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration will be brought into use, and every effort made to familiarize

the student with the subject under consideration. One or two lectures will be given upon the important subjects of toxicology and examination of urine; also upon the testing of Pharmacopœial preparations by means of test and volumetic solutions.

The lecturer has made arrangements with several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refinery, drug mills, etc., to accompany the Senior Class of students, where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize them with matters which can be only imperfectly explained in lectures and text books.

SCHEDULE OF LECTURES.

MONDAY.	TUESDAY.	THURSDAY.	FRIDAY.
P.M. 7:30–Materia Medica. *Juniors.* 8:30–Pharmacy. *Juniors.*	P.M. 7:30–Chemistry. *Seniors.* A.M. 11:30–Botany. *Seniors.* P.M. 8:30–Materia Medica. *Seniors.*	A.M. 11:30–Botany. *Juniors.*	P.M. 7:30–Chemistry. *Juniors.* 8:30–Pharmacy. *Seniors.*

Members of the Alumni Association appointed by the Board of Trustees of the College will conduct the Class Quizzes on Monday, Wednesday and Friday evenings, after the close of the lecture, as follows:

SCHEDULE OF ALUMNI QUIZ AND INSTRUCTION IN LATIN.

MONDAY.	TUESDAY.	FRIDAY.
P.M. 9:30–Pharmacy and Materia Medica, (alternating). *Juniors.* 10:20–Chemistry and Botany, (alternating). *Juniors.*	P.M. 9:30–Chemistry and Pharmacy, (alternating). *Seniors.*	P.M. 7:30–Materia Medica and Botany, (alternating). *Seniors.* 8:30–Latin Instruction. *Juniors.* 9:30–Latin Instruction. *Seniors.*

Latin.

Many persons having entered upon the profession of Pharmacy with little or no knowledge of Latin, this college last year appointed an instructor to teach the rudiments of this language, and such technical use of it as will enable the student to read physicians' prescriptions and Latin pharmacopœias with accuracy. Attendance upon this class is entirely optional. Nevertheless, as the correct reading of prescriptions forms a part of the practical examination for the degree, it is important that the student should, at some period, obtain a fair knowledge of rudimentary Latin. Those who were members of this class last year derived much benefit from the instruction they received, and the trustees recommend all whose early advantages in this department have been limited to make up their deficiency during the College course, if they have not done so before.

Final Examinations

Preliminary Examination, see page 7.
Periodical Examinations during the session, page 7.

Junior Examination.

(For admission to the Senior Class.)

Junior students whose rating in the monthly examination above referred to (see page 7) shall be found to show a satisfactory proficiency and degree of progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Juniors failing to receive a sufficiently high rating to warrant their admission to the Senior Class on that evidence alone, will be required to pass the *Junior Examination* at the commencement of the next lecture term in those branches only in which their rating at the monthly examinations may have been insufficient. If the results of this examination shall show that they have, by study, made good their previous deficiency, they will then be permitted to enter the Senior Class.

First course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, will be required to pass the *Junior Examination* before referred to.

Modified Junior Examination.

In consequence of the limited time that many students have for study, while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the trustees have made arrangements for a Modified Junior Examination.

A student having attended one full course of lectures in the Junior Class, may, at the end of this course, select of the parts into which the Junior examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, Committee) any number in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September 1st. If he pass in all the branches selected by him, the results will be placed to his credit; and after attending another Junior course, he may in like manner make application to come forward in the remaining parts of the examination, and if he pass also in these, he will be entitled to join the Senior Class. If, at the first partial examination, he should fail in any one branch selected, he will be re-examined in this branch also during his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

Senior Examination.

The Senior Class will be examined at the end of the session, for the Degree of Graduate in Pharmacy, in Chemical Synthesis and Analysis, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters of drugs, their doses and uses, Theoretical and Practical Pharmacy, and the Translation of Recipes from Latin into English, and from English into Latin. The Practical Examination will include the actual Compounding of Prescriptions, and the manipulation of Drugs and Chemicals, in presence of the examiners.

Modified Senior Examination.

A senior student having attended at least two full courses of lectures, may, at the end of the Senior course, select from the parts into which the Senior Examination is divided (Materia Medica, including the Identification of Specimens, Pharmacy, Chemistry, Botany, Committee, and Practical Examination), those in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September 1st. If he pass in any of the branches selected by him, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and after attending another course of lectures, he may, in like manner, make application for examination in the remaining branches, and if he thus complete his examination in accordance with the rules of this College, he will be recommended for the degree of Graduate in Pharmacy.

Prizes.

Three prizes will be awarded to the students who pass the most satisfactory and complete examinations in all the branches at the close of the term, as follows:

A Gold Medal will be presented by the Faculty to the Senior student who attains the highest general average.

Books or Apparatus to the value of twenty dollars, offered by *Valentine Schmidt, Esq.*, will be presented to the Senior student who stands second in the general average.

Tickets to the Second Course will be given to the Junior student who attains the highest average standing in the monthly examinations during his first course.

Conditions of Graduation.

Every person upon whom the Diploma of Graduate in Pharmacy shall be conferred must be of good moral character, shall have attained the age of 21 years, and attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had, inclusive of the time of attendance at this College, four years' experience in a Pharmacy where prescriptions are compounded. No special examination will be held for candidates for the Degree, but only an examination at the end of the regular course.

He must present a *thesis* to the Dean on or before September 1st. The thesis must be an original dissertation upon some subject relating to Pharmacy or its collateral branches, or on a chemical analysis conducted by himself. It must be written by the candidate himself, in the English language, and on the regular thesis-paper furnished by the College, so as to admit of being bound uniformly with the others in volumes for preservation.

The title or subject of the thesis must be sent to the Dean on or before June 1st, to be approved or rejected by the Trustees and Faculty. Students are advised to select a suitable subject as early as possible, and to complete all the necessary experiments connected therewith during the winter vacation, so as to be able to give their full time to study during the second lecture-term. The professors, as well as the officers of the College, will, if called upon, aid the students in the selection of an appropriate subject.

Should the candidate fail to pass a satisfactory examination, the thesis will be returned to him, provided he apply for it within thirty days after the close of the examination.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the Degree is conferred (the College of Pharmacy being affiliated with the University).

Graduates of such Medical Colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy, and Botany will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined *in Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded.

The time actually spent in attendance at Lectures in this college (that is to say, the Lecture seasons) will be considered as a part of the term of service. Persons employed in wholesale drug houses and manufacturing establishments may, in this way, avail themselves of the course of study offered by the College to make themselves familiar with matters which are of daily use in their vocations, and receive evidence of their proficiency in the above branches. Certificates of Proficiency for successful candidates under 21 years of age, for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica, or Botany, must be paid for at the rate of two dollars each.

FEES.

Matriculation (paid but once)	$ 2.50
Botany	12.50
Chemistry	12.50
Pharmacy	12.50
Materia Medica	12.50
Diploma Fee	10.00
Certificate of Proficiency	2.00
Latin (optional). Three months' ticket	4.50
Junior Quiz Class (optional) for the Term	5.00
Senior " " " " "	6.00

The Diploma fee is to be paid when the candidate presents himself for examination for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

The Matriculation and Lecture Tickets must be taken out by each student in person, and must be endorsed by the several professors, the former within fifteen, and the latter within thirty days, from the beginning of the lecture course.

Members and Graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the departments of the University of California and in the Cooper Medical College will be admitted to the lectures by matriculating, and paying only for the matriculation ticket.

Other Students, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

Board and Lodging.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 cents to 40 cents. Single furnished rooms may be had, without board, for from $5.00 to $10.00 per month.

Employment.

Temporary situations whilst attending college may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of students who desire situations, and all the officers of the College will use their influence to find employment for them.

Pharmacists entering Medical Colleges.

Graduates in Pharmacy of this College are permitted to present themselves for examination for the degree of Doctor of Medicine in the medical department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object.

Alumni Association.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

Text Books.

U. S. Pharmacopœia, 1880.

Organic Materia Medica, by J. M. Maisch.

U. S. Dispensatory, by Wood, Remington, and Sadtler.

National Dispensatory, by Stille and Maisch.

Parrish's Practical Pharmacy.

Thomé's Botany.

Behr's Local Flora.

Muter's Pharmaceutical and Analytical Chemistry.

Reference Books.

Pereira's Materia Medica.

Attfield's Pharmaceutical Chemistry.

Fownes' Chemistry.

Roscoe's Elementary Chemistry.

Proctor's Lectures on Practical Pharmacy.

Gray's Lessons in Botany.

Gray's How Plants Grow.

Pharmacographia, Fluckiger and Hanbury.

STUDENTS OF 1884.

SENIORS.

Name.	Nativity.	Preceptor.
Ball, Henry Augustus	Illinois	Nelson, Ball & Co.
Barbat, Josephine Eugenie	Cal.	Dr. John Barbat
Beaizley, George Theophilus	Australia	W. M. Searby
Besthorn, Henry E. D	Germany	E. W. Runyon
Cotter, Thomas Stephen	Cal.	Dr. McDermott
Davis, William James	Cal.	F. B. Hulting
Dick, William Henry	Cal	G. Leipnitz & Co.
Dorrance, Ralph Gregory	Michigan	N. S. Thompson
Emmal, William Boon	Cal.	John Devine
Friedhofer, William		C. A. Bayly
Hughes, Thomas Heuston	Cal.	J. R. Gates & Co.
Kelly, Frank Stanislaus	Cal	H. B. Slaven
Krause, Frederick Louis	Cal.	E. W. Runyon
Leber, Albert Louis	Cal.	Bart Morgan & Co.
Levison, Charles Gabriel	Nevada	Dr. Strong
Loehr, George William	Cal.	P. Flatow
Martin, William Henry	New Zealand	W. J. Bryan
Meyer, August William	Illinois	W. W. Kilbourn
Munson, James Grant		Steylaars & Rossi
Newby, Thomas Sheridan	Missouri	T. M. Edwards
Oberdeener, George	Cal.	F. Grazer
Roethe, Charles	Cal.	C. Roethe
Ruiz, Louis Philip	Cal.	C. F. Richards & Co
Stecher, Edward	Cal	J. G. B. Broemmel
Tjader, Curry W	Nevada	A. M. Kurtz
Topley, James Henry	Cal	John Calvert
Walsh, Andrew Desmond	Cal	Will Frisbie
Whitney, William Benjamin	Maine	Wright & Brown
Zweybruck, Frederick	Cal.	E. W. Runyon

JUNIORS.

Name.	Nativity.	Preceptor.
ARGENTI, FRANK WILLIAM	Cal	J. H. Dawson.
BOALT, THOMAS WARREN	Cal	Hansen & Boalt.
BOND, FREDERICK TAYLOR	Cal	John Calvert
CRANE, SAMUEL FRANK	New York	
DOUGLAS, WILLIAM H	Missouri	E. C. Burr, Ph.D.
DROSSEL, AUGUST ADOLPH	Cal	J. H. Drossel.
FRANCIS, WILLARD HUGO	Cal.	
GALLWEY, JAMES AMBROSE	Cal.	G. Leipnitz & Co.
HAHNMAN, PAUL THEODORE	Cal	E. W. Joy.
HALL, JOSEPH UNDERWOOD	Nevada	J. Jones (Gold Hill).
HARDING, JOHN HERBERT	Mass	
HILBY, FRANCIS MARTIN	Cal	F. M. Hilby.
HUGHES, SAMUEL F	Penn	C. L. Barrington.
JANUARY, JAMES	Cal	Val. Schmidt & Co.
MALONY, EDWARD JAMES	Cal	Stoddart Bros.
MAYER, OSCAR JOSEPH	Germany	
MERRILL, CLARENCE SIDNEY	Cal	S. S. Merrill.
PATRICK, JOSEPH LEARY	New York	H. B. Slaven.
PATTON, WILLIAM JESSE	Oregon	C. W. Cornelius.
PRESLEY, WILLIAM HENRY	Cal.	G. G. Burnett.
PRIEN, HARRY FREDERICK	Germany	F. C. Keil
REILLY, EUGENE CROWELL	Cal	P. J. Reilly.
SCHMELZ, CHARLES JOSEPH	Germany	R. Urban, M.D.
SMITH, EDWARD WALLACE	Cal	Kirkland & Trowbridge.
SKILLING, HARVEY HENRY	Illinois	W. V. Grimes, M.D.
TURNER, GUY SYLVESTER	Cal	W. W. Granger.

GRADUATES.

Name.	Date of Graduation.	Thesis.
Adair, Wm. H	1881	Extract of Malt.
Argenti, J. J. B	1881	The Olive and its Product.
Bacon, Gaston E	1875	Analysis of Tincture of Opium.
Barbat, Josephine E.	1884	Apium Graveolens.
Barbat, J. H	1880	Taraxacum Leaves and Root.
Bauer, Fred C	1877	Analysis of Well Water.
Ball, Henry A	1884	Analysis of Wilhoit Mineral Water
Ball, Robert L	1882	Bitter Bark from San Salvador.
Beckett, F. Arthur	1883	Hydrobromic Acid.
*Besthorn, H. E. D.	1884	Alpinia Officinarum.
Burnett, G. G	1879	Rhamnus Purshiana.
Barrington, Chas. L.	1882	Vitis Vinifera.
Chard, Geo. R	1881	Iodoform.
Cody, Nelson A	1881	Croton Procumbens.
Curragh, John M	1877	Damiana.
Calegaris, Joseph	1882	Punica Granatum.
Devine, John	1877	Seidlitz Powders.
DeWitt, James M	1881	Pharmaceutical Ethics.
Dick, William H	1884	Chamæcyparis Lawsoniana.
Dignan, Michael H.	1883	Anal. of a Sulphuretted Mineral Water.
Dubois, Paul A	1880	Grindelia Robusta.
D'Artenay, Eugene	1882	Berberis Aquifolium.
Elwert, Chas. P	1881	Gelsemium Sempervirens.
Fevrier, J. P	1881	Jarborandi.
Fitzell, Charles R.	1883	Humulus Lupulus.
Fletcher, David M.	1881	Assays of Cinchona Bark.
Gove, D. M	1881	A well-arranged Pharmacy.
Graham, Thomas D.	1875	Oxtropis Campestris.
Grazer, F. A	1880	Berberis Aquifolium.
Green, Franklin T.	1882	Analysis of Well Water.

Name.	Date of Graduation.	Thesis.
*Green, John A.	1883	Melaleuca Hypericifolia.
Hammit, Chas. H.	1881	Analysis of Piedmont Spring Water.
Harris, Henry R.	1876	Hydrocyanic Acid.
Helke, W. S.	1878	Erythroxylon Coca.
Heany, J. P.	1874	Oreodaphne Californica.
Hulting, B. F.	1880	Arctostaphylos Glauca.
Hurtzig, W. F. N.	1881	Chloroform.
Happersberger, Emil.	1882	Cinchona Culture in California.
Jones, Morgan L.	1883	Agave Americana.
Joy, Edwin W.	1878	Fluid Extracts by Re-percolation.
Judson, Russell H.	1882	Carica Papaya.
Kahn, Adolph J.	1875	Pharmaceutical Education.
*Korper, Harry W.	1883	Boldoa Fragrans.
*Krause, Frederick L.	1884	Aqua Menthæ Piperitæ.
Leber, Albert L.	1884	Euphorbia Ocellata.
Lengfeld, Felix	1880	Assays of Opium.
Leszynsky, Sam'l.	1880	Peptone.
*Levison, Charles G.	1884	Euphorbia Pilulifera.
Lindsay, Frederick G.	1883	Schinos Molle.
Loehr, George W.	1884	Qualitative and Quantitative Tests of Dgs.
Lustig, Danl. David.	1881	Heteromeles Arbutifolia.
Mathewson, J. McL.	1879	Mitchella Repens.
McDonnell, S. A.	1878	Dialysed Iron.
†McLean, F. P.	1875	Analysis of Magnesites.
McLaughlin, W. H.	1878	Eriodictyon Glutinosum.
Mervy, Emile C.	1879	Lupinus Chamissonis.
Messing, L. J.	1879	Eucalyptus Globulus.
Meyers, Rob't C.	1875	Sesame Oil and its Uses.
Minor, Geo. W.	1879	Larrea Mexicana.
Morrison, W. P.	1880	Table of Solubilities.
Moore, Berkley W.	1883	Pyrethrum Cinerariæfolium.
Moore, C. C.	1878	Analysis of Soil.
Munson, James G.	1884	Volumetric Tests of Arsenical Prep'tions.
Murphy, Martin J.	1881	Amygdalus Communis.
Newby, Thomas S.	1884	Chenopodium Californicum.
Oberdeener, George.	1884	Rumex Hymenosepalus.
Oberdeener, Sam'l.	1880	Pharmaceutical Notes.
Parker, E. S.	1878	Aspidium Argutum.
Ray, Fred E.	1876	California Opium.

Name.	Date of Graduation.	Thesis.
*Reilly, Paul H	1883	Tannic Acid.
Rimpau, Frank T.	1883	An Assay of Ore.
Rogers, Nathan	1876	Sium Latifolium.
Roturier, Emile	1883	Piperidine.
Scholl, A. L.	1881	Zygadenus Fremontii.
Selzer, Edward	1877	Percolation *vs.* Maceration.
Skinner, Robert W.	1883	Semen Bardanæ.
Smith, Arthur H	1879	Fucus Nodosus.
Sommer, Adolph.	1879	Calcium Cyanide.
Troppman, Chas. M.	1881	Rhododendron Occidentale.
Tryon, Jas. W.	1882	Mimulus Glutinosus.
†Vreeland, Ph. L	1879	Syrupus Ferri Iodidi.
Young, Wilfred M.	1882	Megarrhiza Californica.
*Wall, Henry A.	1883	Erythroxylon Coca.
Walsh, Andrew D	1884	Malva Rotundifolia.
Weiss, Philip	1878	Leeches.
Whitney, William B.	1884	Euphorbia Eremocarpus.
Wight, David	1882	California Drug Law.
Zemansky, J. H	1878	Nicotiana Tabacum.

*Certificate of Proficiency. †Deceased.

GRADUATING CLASS, 1884.

Josephine E. Barbat,	Charles G. Levison,
Henry A. Ball,	George W. Loehr,
Henry E. D. Besthorn,	James G. Munson,
William H. Dick,	Thomas S. Newby,
Frederic L. Krause,	George Oberdeener,
Albert L. Leber,	Andrew D. Walsh,

William B. Whitney.

George Oberdeener received the First Prize of a Gold Medal.

Albert L. Leber received the Second Prize, Roscoe & Schorlemmer's Chemistry, 5 vols.

Charles J. Schmelz, of the Junior Class, was awarded tickets to the Senior Course of Lectures, for passing the most satisfactory examination in all the branches.

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Adair, Wm. H	327 Montgomery St., San Francisco	1881
Argenti, J. J. B.	859 Market St., San Francisco	1881
Bacon, G. E.	S. W. Cor. Sutter and Dupont Sts., S. F.	1875
Barbat, J. H.	910 Pacific St., San Francisco	1880
Barbat, Josephine E.	910 Pacific St., San Francisco	1884
Beckett, F. A.	529 Market St., San Francisco	1883
Besthorn, H. E. D.	65 Minna St., San Francisco	1884
Calegaris, J.	S. E. Cor. Kearny and Pacific Sts., S. F.	1882
D'Artenay, E.	N. E. Cor. Post and Mason Sts., S. F.	1882
Devine John	S. E. Cor. Kearny and Clay Sts., S. F.	1877
Dick, W. H.	234 Sutter St., San Francisco	1884
Dignan, M. H.	717 Clay St., San Francisco	1883
Dubois, P. A.	Cor. Kearny and Washington Sts., S. F.	1880
Elwert, C. P.	S. W. Cor. Sutter and Dupont Sts., S. F.	1881
Fletcher, D. M.	Cor. Geary and Stockton Sts., S. F.	1881
Fevrier, J. P.	Cor. Pacific and Stockton Sts., S. F.	1881
Gove, D. M.	N.W. Cor. California and Fillmore Sts., S.F.	1881
Grazer, F. A.	113 Fulton St., San Francisco	1880
Green, F. T.	Austin, Nevada	1882
Happersberger, E.	234 Sutter St., San Francisco	1882
Hulting, B. F.	3rd and Folsom, San Francisco	1880
Hurtzig, W. F. N.	140 Third Street, San Francisco	1881
Jones, M. L.	Cherokee Flat, California	1883
Joy, Edwin W.	852 Market St., San Francisco	1878
Judson, R. H.	320 Sansome St., San Francisco	1882
Kahn, A. J.	234 Kearny St., San Francisco	1875
Korper, H. W.	Cor. Post and Dupont Sts., San Francisco.	1883
Krause, F. L.	Chico, California	1884
Leber, A. L.	7th and Market, Oakland, California	1884
Lengfeld, F.	N. E. Cor. Stockton and Geary Sts., S. F.	1880
Leszynsky, S. L.	2 Battery St., San Francisco	1880

		Class
Loehr, G. W.	Cor. Geary and Jones Sts., San Francisco	1883
Lustig, D. D.	Cor. Natoma and 6th Sts., San Francisco	1881
McDonnell, S. A.	327 Montgomery St., San Francisco	1878
Minor, G. W.	N. E. Cor. Turk and Taylor Sts., S. F.	1879
Moore, C. C.	Stockton, California	1878
Munson, J. G.	Cor. 19th and Mission Sts., San Francisco	1884
Oberdeener, S.	Santa Clara, California	1880
Ray, F. E.	Sacramento, California	1876
Reilly, P. H.	Oakland, California	1883
Roturier, E.	318 Montgomery Avenue, San Francisco	1883
Scholl, A. L.	Cor. 5th and Mission, San Francisco	1881
Sommer, Ad.	Berkeley, California	1879
Troppman, C. M.	S. W. Cor. 6th and Folsom, San Francisco	1881
Wall, H. A.	Vancouver, Washington Territory	1883
Walsh, A. D.	San Mateo, California	1884

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The Session of 1885 will begin February 2d and terminate October 31st.

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For further information or for the Annual Announcement, address

ROBERT A. McLEAN, M.D., DEAN,
603 Merchant Street, corner Montgomery,
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* Deceased.

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ANNOUNCEMENT

OF THE

FOURTEENTH ANNUAL SESSION

OF THE

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113 Fulton Street.

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PHARMACY, - - -	
MATERIA MEDICA, - - -	
BOTANY. - - - -	

INSTRUCTOR IN LATIN.

CHAS. S. GREENE.

PREFATORY.

The trustees of the California College of Pharmacy take pleasure in presenting to the Pharmacists and Druggists of the Pacific Coast the annual announcement for the Fourteenth Course of Lectures, instituted with special reference for the acquisition of scientific knowledge and manipulative skill in identifying, testing, preparing and dispensing medicines.

The advantage of a Preliminary Examination, before admitting students to the College, is now fully recognized as a step in the right direction. The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one of whose fitness there can be a reasonable hope. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have the necessary common-school education to enable them to take up with profit the more advanced studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to attain the proper education, employers should insist upon their making up the deficiency in this respect without delay. As young men are recommended not to enter the college until they are eighteen years of age, those who intend to make pharmacy their vocation should use their spare time before they reach that age in obtaining, at least, a good common-school education, if they have not already done so. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. They should also master the rudiments of Latin, so that, if possible, they may not need to devote any time during lecture-term to this subject. As yet, however, the Trustees do not insist upon students passing an examination *in Latin* previous to entering the College, though probably they will do so in a few years. In the mean time an Instructor in Latin has been appointed, the attendance upon this class being optional. This position will be very ably filled by Mr. Charles G. Greene, whose experience as a teacher, and whose acquaintance with pharmaceutical Latin will give him exceptional fitness for the office. Young men in drug stores, whether students of the College or not, are advised to join his

class, if they have not already acquired a sufficient knowledge of Latin, and pharmacists in this city will do well to direct the attention of their employès to this opportunity.

The complete division of the students into two classes, a Junior and a Senior, which has been in operation the past three years, has proved very beneficial, though adding greatly to the labors of the Faculty. The Trustees believe that the more fully they can carry out a graded system of instruction, the better will it be for the students. The Modified Examinations now provided for will enable some who may be willing to take three or four years to complete their college course, to divide their studies as may best suit their circumstances.

A system of periodical examinations was inaugurated two years ago, with great advantage to the classes. These examinations will be held monthly during the lectures, and the Faculty will be assisted in conducting them by four Committees of the Board of Trustees—one for each chair. This plan is adopted with the hope that it will stimulate earnest, systematic study from the very opening of the term to its close.

On the recommendation of the Alumni Association of this College, the Trustees have directed the appointment of a "Quiz-Master" for each chair, to assist the students in reviewing the lectures of the several Professors. Such reviews, when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment, as well as the profit of associated study.

Contrary to the custom in Eastern and Western Colleges of Pharmacy, the lectures of this College are delivered in the summer months. This enables the Professor of Botany to give his instructions by demonstration in Field Botany, at the same time that the other lectures are given. It is the season when business in this city is lightest, thus, rendering it more easy for clerks to find time to attend lectures and to study at home.

San Francisco, as an educational centre, has few superiors in the United States. In addition to its excellent Grammar and High Schools, its Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most

excellent Free Library, which is used by all class of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and here is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

The New College Building is a matter of pride and satisfaction to all who are interested in Pharmaceutical Education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is situated on Fulton street, west of Polk, and though not large, provides sufficient accommodation for the College for some years to come. It is 30 x 80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the Professors; back of these is a Lecture Hall, 30 x 45 feet. Over the Lecture Hall is the Laboratory of the same size. On the same floor are two rooms used by the students in their various classes; also for meetings of committees and for other purposes. The third story consists of a small dwelling of five rooms, where the Curator resides. As it was necessary to exercise economy in the expenditures, there has been no attempt to produce an ornamental edifice, and the Trustees believe that for the comparatively small outlay (about $6,000), the structure is exceedingly well adapted to the requirements of the College and Society. Considerable additions were made to the Museum the last year, partly by purchase and partly by donation, including a large number of Materia Medica specimens. The latest acquisitions to the College, as means for instruction, mention may be made of the purchase of an Oxy-hydrogen lantern, and new chemical and physical apparatus, together with various charts for lecture illustrations in the different departments.

ANNOUNCEMENT.

PRELIMINARY EXAMINATION—MATRICULATION.

Every applicant for admission to the regular course for graduation at this college will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography and arithmetic.

Candidates will therefore be at the college on

FRIDAY, APRIL 2D, AT 9 A. M.,

for the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above-mentioned branches.

PERIODICAL EXAMINATIONS DURING THE SESSION.

The system of written examinations at stated intervals adopted by this College has been highly beneficial. These examinations will take place monthly, in each of the subjects lectured upon by the several professors, and quarterly in the reading and translating of Latin prescriptions.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees; and the average ratings of students as shown by the results thus obtained will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

THE LECTURES

Will be delivered in the hall of the College of Pharmacy, 113 Fulton Street, between Polk and Van Ness Avenue, on Monday, Tuesday and Friday evenings, with daylight demonstrations in Botany on Tuesdays and Thursdays, from 11.30 A. M. to 12 30 P. M.; commencing Monday, April 5th, and terminating about the end of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M.D., PH.G.

The lectures to the Junior Class will be delivered on Fridays, at 7:30 P. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, in which will be included the electro-chemical theory, the equivalence of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmacal student.

The lectures to the Senior Class will be delivered on Tuesdays at 7.30 P. M.

In the Senior course the student will be instructed in the more advanced departments of chemical philosophy: molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives: the alcohols, ethers, acids, glucosides, alkaloids, &c., will receive their due share of attention.

MATERIA MEDICA.

Professor Frederick A. Grazer, Ph.G.

The lectures will be delivered to the Junior class every Monday, at 7:30 P. M., and will begin by referring to drugs derived from the Vegetable Kingdom; these will be taken up according to the natural orders under which the plants are classed from which they are obtained. The distinguishing characters of each of the natural orders will be considered and a complete description of the parts of the plants used and officinally recognized will be given; their internal and external structure will be explained with the aid of black-board drawings and the microscope.

Their commercial source, period of collection, their selection as to quality, and the manner of preserving will be referred to. The latter part of the term will be devoted to the study of the drugs of animal origin officinally recognized. These will be fully considered as to their source, description, mode of collection, constituents, medical properties, doses and preparations.

The Lectures to the Senior Class will be delivered every Tuesday evening at 8:30 o'clock, and full description of the officinal drugs derived from the vegetable kingdom will be given; these will receive particular attention in regard to their physical properties, histological structure and chemical constituents which offer the most reliable means of identifying and distinguishing the different drugs and of recognizing adulterations or admixtures. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration. Tests such as may be of practical interest will be frequently made before the class.

Microscopic structures will be illustrated by means of diagrams and drawings and the use of the magic lantern.

The study of drugs will in this term be taken up according to their structural characters, commencing with roots and following in order with rhizomes, tubers, bulbs, stems, woods, etc.

The students will at stated intervals be required to identify and select drugs.

BOTANY.

HERMANN H. BEHR, M.D.

The lectures will be delivered on Tuesday and Thursday of each week, at 11.30 A. M. The lectures will include elementary, structural and systema ic botany, and the geography of plants. In addition to these weekly lectures, excursions into the country will be made every fortnight during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

For those students having especial interest for botany, lectures and ex ursions will begin on February 17th, for much of the Flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

THEORY AND PRACTICE OF PHARMACY.

PROFESSOR EDWARD W. RUNYON, PH.G.

Lectures to the Junior Class on Mondays, at 8.30 P. M., and to the Senior Class on Fridays, at 8.30 P. M.

THE JUNIOR COURSE of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms, and a review of the history of the United States Pharmacopœia, as well as a consideration of text-books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France, and Germany—also Specific Gravity, and the means and apparatus necessary for its determination—will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical operations, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional, and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected; the principles of solution, filtration, clarification, and decoloration, neutraliza-

tion, crystallization, precipitation, and dialysis; following this, the important subjects of digestion, infusion, maceration, percolation, and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

The Senior Course of pharmacy lectures will treat directly and systematically of the preparations of the Pharmacopœia, bringing in, from time to time, those principles that are taught in the Junior Course, and which are so necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture, and employment, the adulterations and sophistications to which they are subject, and the methods of their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration will be brought into use, and every effort made to familiarize the student with the subject under consideration. One or two lectures will be given upon the important subjects of toxicology and examination of urine; also upon the testing of Pharmacopœial preparations by means of test and volumetic solutions.

The lecturer has made arrangements with several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refinery, drug mills, etc., to accompany the Senior Class of students where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize them with matters which can be only imperfectly explained in lectures and text books.

Schedule of Lectures.

MONDAY.	TUESDAY.	THURSDAY.	FRIDAY.
P.M. 7:30–Materia Medica. *Juniors.*	P.M. 7:30–Chemistry. *Seniors.*	A.M. 11:30–Botany. *Juniors.*	P.M. 7:30–Chemistry. *Juniors.*
8:30–Pharmacy. *Juniors.*	A.M. 11:30–Botany. *Seniors.*		8:30–Pharmacy. *Seniors.*
	P.M. 8:30–Materia Medica. *Seniors.*		

Several members of the Alumni Association of the College, to be appointed by the Faculty, will conduct the Class Quizzes on Monday, Wednesday, and Friday evenings, after the close of the lecture, as follows:

MONDAY.	TUESDAY.	FRIDAY.
P.M. 9:30–Pharmacy and Materia Medica, (alternating). *Juniors.*	P.M. 9:30—Chemistry and Pharmacy, (alternating). *Seniors.*	P.M. 7:30–Materia Medica and Botany, (alternating). *Seniors.*
		8:30–Latin Instruction. *Juniors.*
10:20–Chemistry and Botany, (alternating,) *Juniors.*		9:30–Latin Instruction. *Seniors.*

LATIN.

Many persons having entered upon the profession of Pharmacy with little or no knowledge of Latin, the Trustees have appointed an instructor to teach the rudiments of this language, and such technical use of it as will enable the students to read physicians' prescriptions and Latin pharmacopœias with accuracy. Attendance upon this class is entirely optional. Nevertheless, as the correct reading of the prescriptions forms a part of the practical examination for the degree, it is important that the student should, at some period, obtain a fair knowledge of rudimentary Latin. Those who were members of this class last year derived much benefit from the instruction they received, and the Trustees recommended all whose early advantages in this department have been limited to make up their deficiency during the College course, if they have not done so before.

FINAL EXAMINATIONS.

Preliminary Examination, see page 7.

Periodical Examination during the session, page 7.

JUNIOR EXAMINATION.

(FOR ADMISSION TO THE SENIOR CLASS.)

Junior students whose rating in the monthly examination above referred to (see page 7) shall be found to show a satisfactory pro-

ficiency and degree of progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Juniors failing to receive a sufficiently high rating to warrant their admission to the Senior Class on that evidence alone, will be required to pass the *Junior Examination* at the commencement of the next lecture term in those branches only in which their rating at the monthly examinations may have been insufficient. If the results of this examination shall show that they have, by study, made good their previous deficiency, they will then be permitted to enter the Senior Class.

First course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, will be required to pass the *Junior Examination* before referred to.

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study, while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a Modified Junior Examination.

A student having attended one full course of lectures in the Junior Class, may, at the end of this course, select of the parts into which the Junior examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, Committee,) any number in which he may desire to be examined, notice of said election to be given in writing to the Dean of the Faculty, on or before September the 1st. If he pass in all the branches elected by him, the results will be placed to his credit; and after attending another Junior course, he may in like manner make application to come forward in the remaining parts of the examination, and if he pass also in these, he will be entitled to join the Senior Class. If, at the first partial examination, he should fail at any branch selected, he will be re-examined in this branch also during his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

SENIOR EXAMINATION.

The Senior Class will be examined at the end of the session, for the Degree of Graduate in Pharmacy, in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters of drugs, their doses and uses, Theoretical and Practical Pharmacy, and the Translation of Recipes, from Latin into English, and from English into Latin. The practical Examination will include the actual compounding of Prescriptions, and the manipulation of Drugs and Chemicals, in presence of the examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least two full courses of lectures, may at the end of the Senior course, select from the parts into which the Senior Examination is divided (Materia Medica, including the identification of Specimens, Pharmacy, Chemistry, Botany, Committee, and Practical Examination), those in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September 1st. If he pass in any of the branches selected by him, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and after attending another course of lectures, he may, in like manner, make application for examination in remaining branches, and if he thus complete his examination in accordance with the rules of this College, he will be recommended for the degree of Graduate in Pharmacy.

PRIZES.

Three prizes will be awarded to the students who pass the most satisfactory and most complete examinations in all the branches at the close of the term, as follows:

A Gold Medal will be presented by the Faculty to the Senior student who attains the highest general average.

Books or Apparatus to the value of $20, offered by ———, will be presented to the Senior student who stands second in the general average.

Tickets to the Second Course will be given to the Junior student who attains the highest average standing in the monthly examinations during his first course.

CONDITIONS OF GRADUATION.

Every person upon whom the Diploma of Graduate in Pharmacy shall be conferred must be of good moral character, shall have attained the age of 21 years, and attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had, inclusive of the time of attendance at this College, four years' experience in a Pharmacy where prescriptions are compounded. No special examination will be held for candidates for the Degree, but only an examination at the end of the regular course.

He must present a *thesis* to the Dean on or before September 1st. The thesis must be an original dissertation upon some subject relating to Pharmacy or its collateral branches, or on a chemical analysis conducted by himself. It must be written by the candidate himself, in the English language, and on the regular thesis paper furnished by the College, so as to admit of being bound uniformly with the others in volumes for preservation.

The title or subject of the thesis must be sent to the Dean on or before June 1st, to be approved or rejected by the Trustees and Faculty. Students are advised to select a suitable subject as early as possible, and to complete all the necessary experiments connected therewith during the winter vacation, so as to be able to give their full time to study during the second lecture-term. The professors, as well as the officers of the College, will, if called upon, aid the students in the selection of an appropriate subject.

Should the candidate fail to pass a satisfactory examination, the thesis will be returned to him, provided he apply for it within thirty days after the close of the examination.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the Degree is conferred (the College of Pharmacy being affiliated with the University).

Graduates of such Medical Colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy, and Botany, will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined *in Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded.

The time actually spent in attendance at Lectures in this college (that is to say, the Lecture seasons) will be considered as a part of the term of service. Persons employed in wholesale drug houses and manufacturing establishments may, in this way, avail themselves of the course of study offered by the College to make themselves familiar with matters which are of daily use in their vocations, and receive evidence of their proficiency in the above branches. Certificates of Proficiency for successful candidates under 21 years of age, for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica, or Botany, must be paid for at the rate of two dollars each.

FEES.

Matriculation (paid but once)	$ 2.50
Botany	12.50
Chemistry	12.50
Pharmacy	12.50
Materia Medica	12.50
Diploma Fee	10.00
Certificate of Proficiency	2.00
Latin (optional). Three months' ticket	4.50
Junior Quiz Class (optional) for the Term	5.00
Senior " " " " "	6.00

The Diploma fee is to be paid when the candidate presents himself for examination for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

The Matriculation and Lecture Tickets must be taken out by each student in person, and must be endorsed by the several professors, the former within fifteen, and the latter within thirty days, from the beginning of the lecture course.

Members and Graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the departments of the University of California, and in the Cooper Medical College, will be admitted to the lectures by matriculating, and paying only for the matriculation ticket.

Other Students, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

CHEMICAL LABORATORY.

This course comprises work in qualitative and quantitative analysis, requiring about twenty-eight lessons of two hours each during the term of fourteen weeks. The instruction commences with the general qualitative tests and reactions for bases and acids, the identification of chemical substances and the tests for impurities. Practical work will also be given in volumetric and urine analysis. This course is optional and is intended to embrace that part of analytical chemistry most useful to the Pharmacist. The use of apparatus and reagents is free, but a deposit of two dollars will be required of each student, to cover the value of apparatus damaged or destroyed.

Those students desiring a more advanced course in chemical analysis, will receive ample facilities and assistance.

Terms.—Ten dollars per month, payable in advance. Hours: On Wednesday and Friday, from 10—12 a. m., commencing with Wednesday, April 8th.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in the medical department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 cents to 40 cents. Single furnished rooms may be had, without board, for from $5.00 to $10.00 per month.

EMPLOYMENT.

Temporary situations whilst attending college may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of students who desire situations, and all the officers of the College will use their influence to find employment for them.

TEXT BOOKS.

U. S. Pharmacopœia, 1880.

Organic Materia Medica, by J. M. Maisch.

U. S. Dispensatory, by Wood, Remington, and Sadtler.

National Dispensatory, by Stille and Maisch.

Remington's Practical Pharmacy.

Thome's Botany.

Behr's Local Flora.

Muter's Pharmaceutical and Analytical Chemistry.

Richter's Organic Chemistry.

REFERENCE BOOKS.

Pereira's Materia Medica.

Attfield's Pharmaceutical Chemistry.

Fownes' Chemistry.

Roscoe's Elementary Chemistry.

Proctor's Lectures on Practical Pharmacy.

Gray's Lessons in Botany.

Gray's How Plants Grow.

Pharmacographia, Fluckiger and Hanbury.

Parrish's Practical Pharmacy.

SENIORS.

Name.	Nativity.	Preceptor.
Argenti, Francis W. D.	California.	
Beaizley, George T.	Australia	W. T. Kibbler
Bond, Frederick T.	California	John Calvert
Boynton, John M.	California	W. J. Bryan
Crane, Lemuel F.	New York	
Creed, Harry W.	California	P C. Rossi
Davis, William J.	California	N. S. Thompson
Dorrance, Ralph G.	Michigan	
Gallway, James A	California	G. Leipnitz & Co
Hahmann, Paul T.	California	A. Mervy
Hilby, Francis M.	California	
Hughes, Samuel F.	Pennsylvania	J. W. Rule
Hughes, Thomas H.	California	J. R. Gates & Co
Mayer, Joseph O.	Germany	
Meyer, August W.	Illinois	W. W. Kilbourn.
Orena, Arthur G.	California	E. W. Joy
Patton, William J	Oregon	
Prien, Harry F.	Germany	H. F. Prien
Reilly, Eugene C	California	P. J. Reilly
Schmelz, Charles J	Germany	C. L. Steylaars
Skilling, Harry H	Illinois	F. Sandelin
Topley, James H.	California	James Topley
Turner, Guy S	California	
Zweybruck, Frederick B	California	E. W. Runyon

JUNIORS.

Name.	Nativity.	Preceptor.
Boswell, Frank M	California	C. A. Bayley
Bratton, Frederick O	Illinois	G. F. Hanson
Bussenius, Adolph G	California	E. D'Artenay
Churchill, Jerome P	California	
Collins, Hugh	California	Charles Troppmann
Coon, Henry I	California	Merten, Moffit & Co
Driscoll, Frederick A	California	
Gates, Arthur L	Canada	Morey & Gates
Gaughy, Miss Lizzie	Illinois	
Gleaves, Christopher C	Missouri	Gleaves Bros
Haman, Henry	California	W. Heick
Hambrock, Edward W	Ohio	U. S. Medical Department
Heider, Frank B	California	John Calvert
Maldonado Edward	Nevada	
McCormack, John A	California	
Morgan, Charles L	New York	A. L. Lengfeld
Nelson, John F	California	C. M. Troppmann
Off, John A	Iowa	C. W. Tjader
Pressley, William H	California	G. G. Burnett
Rich, Abraham L	California	W. J. Bryan
Riley, John A	Iowa	
Shearer, Edward	California	
Skinner, Edward E	California	
White, James T	Washington Territory	

GRADUATES.

Name.	Date of Graduation.	Thesis.
Adair, Wm. H.	1881	Extract of Malt
Argenti, J. J. B.	1881	The Olive and its Product
Bacon, Gaston E.	1875	Analysis of Tincture of Opium
Barbat, Josephine E	1884	Apium Graveolens
Barbat, J. H.	1880	Taraxacum Leaves and Root
Bauer, Fred. C.	1877	Analysis of Well Water
Ball, Henry A.	1884	Analysis of Wilhoit Mineral Water
Ball, Robert L.	1882	Bitter Bark from San Salvador
Beckett, Arthur F.	1883	Hydrobromic Acid
Besthorn, H. E. D.	1884	Alpinia Officinarum
Burnett, G. G.	1879	Rhamnus Purshiana
Barrington, Chas. L.	1882	Vitis Vinifera
Beaizley, George T.	1885	Abrus Precatorius
Chard, Geo. R	1881	Iodoform
Cody, Nelson A.	1881	Croton Procumbens
Curragh, John M.	1877	Damiana
Calegaris, Joseph.	1882	Punica Granatum
Devine, John	1877	Seidlitz Powders
DeWitt, James M	1881	Pharmaceutical Ethics
Dick, William H.	1884	Chamæcyparis Lawsoniana
Dignan, Michael H.	1883	Anal. of a Sulphuretted Mineral Water
Dubois, Paul A.	1880	Grindelia Robusta
D'Artenay, Eugene.	1882	Berberis Aquifolium
Davis, Wilmiam J.	1885	Artennsia Abrotanum
Dorrance, Ralph G.	1885	Rhamnus Purshiana
Elwert, Chas. P.	1881	Gelsemium Sempervirens
Fevrier, J. P.	1881	Jarborandi
Fitzell, Charles R.	1883	Humulus Lupulus
Fletcher, David M.	1881	Assays of Cinchona Bark
Gove, D. M.	1881	A Well Arranged Pharmacy
Graham, Thomas D.	1875	Oxtropis Campestris
Grazer, F. A.	1880	Berberis Acquifolium
Green, Franklin T.	1882	Analysis of Well Water
Green, John A.	1883	Melaleuca Hypericifolia
Hammit, Chas. H.	1881	Analysis of Piedmont Spring Water
Harris, Henry R.	1876	Hydrocyanic Acid

Name.	Date of Graduation.	Thesis.
Helke, W. S.	1878	Erythroxylon Cocoa
Heany, J. P.	1874	Oreodaphne Californica
Hulting, B. F	1880	Arctostaphylos Glauca
Hurtzig, W. F. N.	1881	Chloroform
Happersberger, Eml.	1882	Cinchona Culture in California
Hahmann, Paul T	1885	Assay of Citrate of Iron and Quinia
Jones, Morgan L	1883	Agave Americana
Joy, Edwin W.	1878	Fluid Extracts by Re-percolation
Judson, Russell H.	1882	Carica Papaya
Kahn, Adolph J	1875	Pharmaceutical Education
Korper, Harry W.	1883	Boldoa Fragrans
Krause, Fredk. L.	1884	Aqua Menthæ Piperitæ
Leber, Albert L.	1884	Euphorbia Ocellata
Lengfeld, Felix.	1880	Assays of Opium
Leszynsky, Sam'l.	1880	Peptone
Levison, Charles G.	1884	Euphorbia Pilulifera
Lindsay, Fred'k. G.	1883	Schinos Molle
Loehr, George W.	1884	Qualitative & Quantitative Tests of Dgs
Lustig, Danl. David.	1881	Heteromeles Arbutifolia
Mathewson, J. McL.	1879	Mitchella Repens
McDonnell. S. A	1878	Dialysed Iron
†McLean, F. P	1875	Analysis of Magnesites
McLaughlin, W. H.	1878	Eriodictyon Glutinosum
Mervy, Emile C	1879	Lupinus Chamissonis
Messing, L J	1879	Eucalyptus Globulus
Meyers, Rob't C	1875	Sesame Oil and its Uses
Minor, Geo. W	1879	Larrea Mexicana
Morrison, W. P	1880	Table of Solubilities
Moore, Berkley W.	1883	Pyrethrum Cinerariæfolium
Moore, C. C.	1878	Analysis of Soil
Munson, James G	1884	Volumetric Tests of Arsenical Prep'tions
Murphy, Martin J.	1881	Amygdalus Communis
Meyer, August W.	1885	Spacele Calcina
Mayer, Oscar J.	1885	Dirca Occidentalis
Newby, Thomas S.	1884	Chenopodium Californicum
Oberdeener, Geo	1884	Rumex Hymenosepalus
Oberdeener, Sam'l.	1880	Pharmaceutical Notes
Parker, E. S	1878	Aspidium Argutum

Name.	Date of Graduation.	Thesis.
Patton, William J.	1885	Analysis of Harden and Lewis's Fire Grenades.
Prien, Harry F.	1885	Oleum Theobromæ
Ray, Fred. E.	1876	California Opium
Reilly, Paul H.	1883	Tannic Acid
Rimpau, Frank T.	1883	An Asay of Ore
Rogers, Nathan	1876	Sium Latifolium
Roturier, Emile	1883	Piperidine
*Reilly, Eugene C.	1885	The Production of Oil of Eucalyptus in California.
Scholl, A. L.	1881	Zygadenus Fremontii
Selzer, Edward	1877	Percolation *vs.* Maceration
Skinner, Robert W.	1883	Semen Bardanæ
Smith, Arthur H.	1879	Fucus Nodosus
Sommer, Adolph	1879	Calcium Cyanide
Schmelz, Charles J.	1885	Audibertia Grandiflora
Skilling, Harry H.	1885	Eucalyptus Globulus
Troppmann, Chas. M.	1881	Rhododendron Occidentale
Tryon, Jas. W.	1882	Mimulus Glutinosus
*Turner, Guy S.	1885	Examination of Bromide of Potassium
Topley, James H.	1885	Volumetric Estimation of Ammonium, Potassium, and Sodium Hydrates.
†Vreeland, Ph. L.	1879	Syrupus Ferri Iodidi
Young, Wilfred M.	1882	Megarrhiza Californica
*Wall, Henry A.	1883	Erythroxylon Coca
Walsh, Andrew D.	1884	Malva Rotundifolia
Weiss, Philip	1878	Leeches
Whitney, William B.	1884	Euphorbia Eremocarpus
Wight, David	1882	California Drug Law
Zemansky, J. H.	1878	Nicotiana Tabacum

*Certificate of proficiency. †Deceased.

GRADUATING CLASS, 1885.

George T. Beaizley,	William J. Patton,
William J. Davis,	Harry F. Prien,
Ralph G. Dorrance,	Eugene C. Reilly,
Paul T. Hahmann,	Charles J. Schmelz,
Oscar J. Mayer,	Harry H. Skilling,
August W. Meyer,	James H. Topley,

Guy S. Turner.

James H. Topley received the First Prize of a Gold Medal.

Oscar J. Mayer received the Second Prize of a Microscope.

Charles Morgan, of the Junior Class, was awarded tickets to the Senior Course of Lectures, for passing the most satisfactory examination in all the branches.

OFFICERS

OF THE

ALUMNI ASSOCIATION

OF THE

CALIFORNIA COLLEGE OF PHARMACY.

PRESIDENT,

EDWIN W. JOY.

VICE-PRESIDENT,

FRED. A. GRAZER.

SECRETARY,

F. ARTHUR BECKETT.

TREASURER,

JEROME J. B. ARGENTI.

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Bacon, G. E	S.W. cor. Sutter & Dupont sts., S. F.	1875
Barbat, J. H.	910 Pacific street, San Francisco.	1880
Barbat, Josephine E.	910 Pacific street, San Francisco.	1884
Beckett, F. A	529 Market street, San Francisco	1883
Besthorn, H. E. D.	65 Minna street, San Francisco	1884
Calegaris, J.	S. E cor. Kearny and Pacific sts., S.F.	1882
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Davis, W. J	Cor. Pacific & Leavenworth, sts., S. F.	1885
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Happersberger, E.	234 Sutter street, San Francisco	1882
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Joy, Edwin W.	852 Market street, San Francisco	1878
Judson, R. H.	320 Sansome street, San Francisco	1882
Kahn, A. J.	234 Kearny street, San Francisco	1875
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Krause, F. L.	Chico, California.	1884
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The Session of 1886 will begin March 1st and terminate November 30th.

Graduates of Pharmaceutical and Dental Colleges in good standing are admitted to the second year without examination.

For further information or for the Annual Announcement, address

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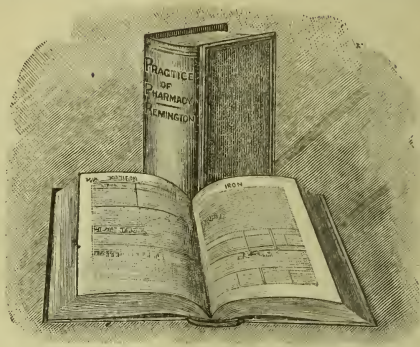
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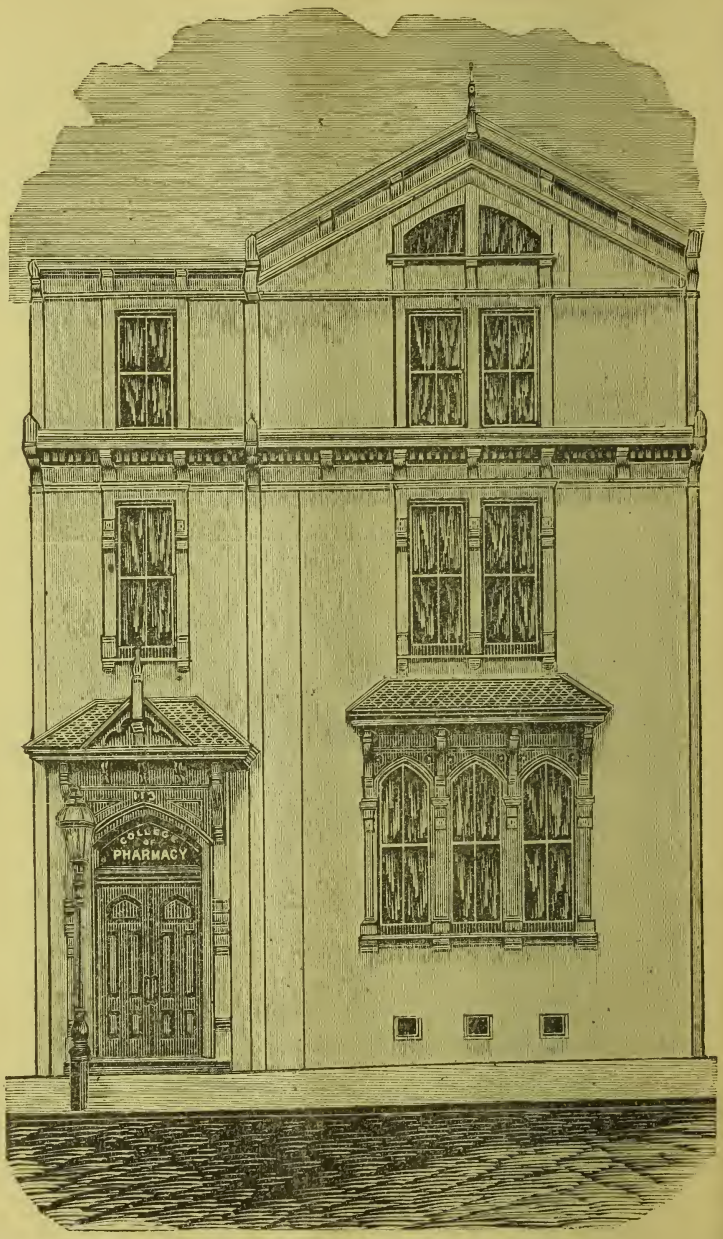
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OF THE

FIFTEENTH ANNUAL SESSION

OF THE

CALIFORNIA COLLEGE OF PHARMACY.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

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Session of 1887. Commencing Monday, April 4.

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Professor of Theory and Practice of Pharmacy—DEAN OF THE FACULTY,
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QUIZ MASTERS.

CHEMISTRY PHARMACY MATERIA MEDICA BOTANY	To be appointed by the members of the Faculty.

INSTRUCTOR IN LATIN.

CHAS. S. GREENE, A. B.

PREFATORY.

The Trustees of the California College of Pharmacy take pleasure in presenting to the Pharmacists and Druggists of the Pacific Coast the annual announcement for the Fifteenth Course of Lectures, instituted with special reference to the acquisition of scientific knowledge and manipulative skill in identifying, testing, preparing, and dispensing medicines.

The advantage of a Preliminary Examination, before admitting students to the College, is now fully recognized as a step in the right direction. The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one of whose fitness there can be a reasonable hope. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have the necessary common-school education to enable them to take up with profit the more advanced studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to obtain the proper education, employers should insist upon their making up the deficiency in this respect without delay. As young men are recommended not to enter the college until they are eighteen years of age, those who intend to make pharmacy their vocation should use their spare time before they reach that age in obtaining, at least, a good common school education, if they have not already done so. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. They should also master the rudiments of Latin, so that, if possible, they may not need to devote any time during lecture term to this subject. As yet, however, the Trustees do not insist upon students passing an examination *in Latin* previous to entering the College, though probably they will do so in a few years. In the meantime an Instructor in Latin has been appointed, the attendance upon this class being optional. This position is very ably filled by Mr. Charles S. Greene, whose experience as a teacher, and whose acquaintance with pharmaceutical Latin give him exceptional fitness for the office. Young men in drug stores, whether students of the College or not, are advised to join his class, if they have not already acquired a sufficient knowledge of Latin, and pharmacists in this city will do well to direct the attention of their employés to this opportunity.

The complete division of the students into two classes, a Junior and a Senior, which has been in operation the past four years, has proved very beneficial, though adding greatly to the labors of the Faculty. The Trustees believe that the more fully they can carry out a graded system of instruction, the better will it be for the students. The Modified Examinations now provided for will enable some who may be willing to take three or four years to complete their college course, to divide their studies as may best suit their circumstances.

A system of periodical examinations was inaugurated three years ago, with great advantage to the classes. These examinations will be held monthly during the lectures, and the Faculty will be assisted in conducting them by four Committees of the Board of Trustees—one for each chair. This plan is

adopted with the hope that it will stimulate earnest, systematic study from the very opening of the term to its close.

On the recommendation of the Alumni Association of this College, the Trustees have directed the appointment of a "Quiz Master" for each chair, to assist the students in reviewing the lectures of the several Professors. Such reviews, when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment, as well as the profit of associated study.

Contrary to the custom in Eastern and Western Colleges of Pharmacy, the lectures of this College are delivered in the summer months. This enables the Professor of Botany to give his instructions by demonstration in Field Botany, at the same time that the other lectures are given. It is the season when business in this city is lightest, thus rendering it more easy for clerks to find time to attend lectures and to study at home.

San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, its Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and here is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical, and physiological chemistry.

The new College Building is a matter of pride and satisfaction to all who are interested in pharmaceutical education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is situated on Fulton Street, west of Polk, and though not large, provides sufficient accommodation for the College for some years to come. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the Professors; back of these is a Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory, of the same size. On the same floor are two rooms used by the students in their various classes; also for meetings of committees, and for other purposes. The third story consists of a small dwelling of five rooms, where the Curator resides. As it was necessary to exercise economy in the expenditures, there has been no attempt to produce an ornamental edifice, and the Trustees believe that for the comparatively small outlay (about $6,000), the structure is exceedingly well adapted to the requirements of the College and society. Considerable additions were made to the Museum the last year, partly by purchase, and partly by donation, including a large number of Materia Medica specimens. The latest acquisitions to the College, as means for instruction, mention may be made of the purchase of an oxy-hydrogen lantern, and new chemical and physical apparatus, together with various charts for lecture illustrations in the different departments.

ANNOUNCEMENT.

PRELIMINARY EXAMINATION—MATRICULATION.

Every applicant for admission to the regular course for graduation at this College will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography, and arithmetic.

Candidates will therefore be at the College on

FRIDAY, APRIL 1ST, AT 9 A. M.,

for the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above mentioned branches.

PERIODICAL EXAMINATIONS DURING THE SESSION.

The system of written examinations at stated intervals adopted by this College has been highly beneficial. These examinations will take place monthly, in each of the subjects lectured upon by the several professors, and quarterly in the reading and translating of Latin prescriptions.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees; and the average ratings of students, as shown by the results thus obtained, will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

THE LECTURES

Will be delivered in the hall of the College of Pharmacy, 113 Fulton Street. between Polk and Van Ness Avenue, on Monday, Tuesday, and Friday evenings, with daylight demonstrations in Botany on Tuesdays and Thursdays, from 11:30 A. M. to 12:30 P. M.; commencing Monday, April 4th, and terminating about the end of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

IMPORTANT NOTICE.—The Lecture session of 1888 will commence in February instead of April.

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M.D., PH.G.

The lectures to the Junior Class will be delivered on Fridays, at 7:30 P. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, in which will be included the electro-chemical theory, the equivalence of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmacal student.

The lectures to the Senior Class will be delivered on Tuesdays, at 7:30 P. M.

In the Senior course the student will be instructed in the more advanced departments of chemical philosophy: molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives: the alcohols, ethers, acids, glucosides, alkaloids, etc., will receive their due share of attention.

MATERIA MEDICA.

PROFESSOR FREDERICK A. GRAZER, PH.G.

The lectures will be delivered to the Junior Class every Monday, at 7:30 P. M., and will begin by referring to drugs derived from the vegetable kingdom. These will be taken up according to the natural orders under which the plants are classed from which they are obtained. The distinguishing characters of each of the natural orders will be considered, and a complete description of the parts of the plants used and officinally recognized will be given; their internal and external structure will be explained with the aid of blackboard drawings and the microscope.

Their commercial source, period of collection, their selection as to quality, and the manner of preserving, will be referred to. The latter part of the term will be devoted to the study of the drugs of animal origin officinally recognized. These will be fully considered as to their source, description, mode of collection, constituents, medical properties, doses, and preparations.

The lectures of the Senior Class will be delivered every Tuesday evening, at 8:30 o'clock, and full description of the officinal drugs derived from the vegetable kingdom will be given. These will receive particular attention in regard

to their physical properties, histological structure, and chemical constituents, which offer the most reliable means of identifying and distinguishing the different drugs, and of recognizing adulterations or admixtures. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration. Tests such as may be of practical interest will be frequently made before the class.

Microscopic structures will be illustrated by means of diagrams and drawings and the use of the oxy-hydrogen lantern.

The study of drugs will, in this term, be taken up according to their structural characters, commencing with roots, and following in order with rhizomes, tubers, bulbs, stems, woods, etc.

The students will, at stated intervals, be required to identify and select drugs.

BOTANY.

HERMANN H. BEHR, M.D.

The lectures will be delivered on Tuesday and Thursday of each week, at 11:30 A. M. The lectures will include elementary, structural, and systematic botany, and the geography of plants. In addition to these weekly lectures, excursions into the country will be made every fortnight during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

For those students having especial interest for botany, lectures and excursions will begin on February 17th, for much of the Flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

THEORY AND PRACTICE OF PHARMACY.

PROFESSOR EDWARD W. RUNYON, PH.G.

Lectures to the Junior Class on Mondays, at 8:30 P. M., and to the Senior Class on Fridays, at 8:30 P. M.

The JUNIOR COURSE of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms, and a review of the history of the United States Pharmacopœia, as well as a consideration of text-books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France, and Germany—also Specific Gravity, and the means and apparatus necessary for its determination—will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness, as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical operations, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional, and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected; the principles of solution, filtration, clarification, and decoloration, neutralization, crystallization, precipitation, and dialysis. Following this, the important subjects of digestion, infusion, maceration, percolation, and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

The SENIOR COURSE of pharmacy lectures will treat directly and systematically of the preparations of the Pharmacopœia, bringing in, from time to time, those principles that are taught in the Junior Course, and which are so necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture, and employment, the adulterations and sophistications to which they are subject, and the methods of their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration will be brought into use, and every effort made to familiarize the student with the subject under consideration. One or two lectures will be given upon the important subjects of toxicology and examination of urine; also upon the testing of Pharmacopœial preparations by means of test and volumetic solutions.

The lecturer has made arrangements with several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refinery, drug mills, etc., to accompany the Senior Class of students where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize them with matters which can be only imperfectly explained in lectures and text-books.

SCHEDULE OF LECTURES.

MONDAY.	TUESDAY.	THURSDAY.	FRIDAY.
P. M. 7:30–Materia Medica. *Juniors.* 8:30–Pharmacy. *Juniors.*	P. M. 7:30–Chemistry. *Seniors.* A. M. 11:30–Botany. *Seniors.* P. M. 8:30–Materia Medica. *Seniors.*	A. M. 11:30–Botany. *Juniors.*	P. M. 7:30–Chemistry. *Juniors.* 8:30–Pharmacy. *Seniors.*

Several members of the Alumni Association of the College, to be appointed by the Faculty, will conduct the Class Quizzes on Monday, Wednesday, and Friday evenings, after the close of the lecture, as follows:

Monday.	Wednesday.	Friday.
P. M. 9:30—Pharmacy and Materia Medica, (alternating). *Juniors.*	P. M. 9:30—Chemistry and Pharmacy, (alternating). *Seniors.*	P. M. 7:30—Materia Medica and Botany, (alternating). *Seniors.*
		8:30—Latin Instruction. *Juniors.*
10:20—Chemistry and Botany, (alternating). *Juniors.*		9:30—Latin Instruction. *Seniors.*

The officers and Faculty recommend students to attend these classes. They do much to refresh the memory upon the subjects that have been taught, difficulties are discussed and overcome, and an impetus is given to study that would not otherwise occur. In many respects the student will derive much benefit by this systematic examination of himself under the direction of those who have already graduated from a college of Pharmacy.

LATIN.

Many persons having entered upon the profession of Pharmacy with little or no knowledge of Latin, the Trustees have appointed an instructor to teach the rudiments of this language, and such technical use of it as will enable the students to read physicians' prescriptions and Latin pharmacopœias with accuracy. Attendance upon this class is entirely optional. Nevertheless, as the correct reading of prescriptions forms a part of the practical examination for the degree, it is important that the student should, at some period, obtain a fair knowledge of rudimentary Latin. Those who were members of this class last year derived much benefit from the instruction they received, and the Trustees recommended all whose early advantages in this department have been limited to make up their deficiency during the College course, if they have not done so before.

EXAMINATIONS.

Preliminary Examination, see page 7.
Periodical Examination during the session, page 7.

JUNIOR EXAMINATION.

(FOR ADMISSION TO THE SENIOR CLASS.)

Junior students whose rating in the monthly examination above referred to (see page 7) shall be found to show a satisfactory proficiency and degree of progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Juniors failing to receive a sufficiently high rating to warrant their admission to the Senior Class on that evidence alone, will be required to pass the *Junior Examination* at the commencement of the next lecture term in those branches only in which their rating at the monthly examinations may have been insufficient. If the results of this examination shall show that they have, by study, made good their previous deficiency, they will then be permitted to enter the Senior Class.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, will be required to pass the *Junior Examination* before referred to.

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a MODIFIED JUNIOR EXAMINATION.

A student having attended one full course of lectures in the Junior Class, may, at the end of this course, select of the parts into which the Junior examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica Committee) any number in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty, on or before September the first. If he pass in all the branches selected by him, the results will be placed to his credit; and after attending another Junior course, he may in like manner make application to come forward in the remaining parts of the examination, and if he pass also in these, he will be entitled to join the Senior Class. If, at the first partial examination, he should fail at any branch selected, he will be reëxamined in this branch also during his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

SENIOR EXAMINATION.

The Senior Class will be examined at the end of the session, for the Degree of Graduate in Pharmacy, in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters

of drugs, their doses and uses, Theoretical and Practical Pharmacy, and the Translation of Recipes, from Latin into English, and from English into Latin. The practical examination will include the actual compounding of Prescriptions, and the manipulation of Drugs and Chemicals, in presence of the examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least two full courses of lectures, may, at the end of the Senior course, select from the parts into which the Senior Examination is divided (Materia Medica, including the identification of Specimens, Pharmacy, Chemistry, Botany, Committee and Practical Examination), those in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September first. If he pass in any of the branches selected by him, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and after attending another course of lectures, he may, in like manner, make application for examination in remaining branches, and if he thus complete his examination in accordance with the rules of this College, he will be recommended for the Degree of Graduate in Pharmacy.

PRIZES.

Three prizes will be awarded to the students who pass the most satisfactory and most complete examinations in all the branches at the close of the term, as follows:

A Gold Medal will be presented by the Faculty to the Senior student who attains the highest general average.

A second prize of a monocular microscope, with coarse and fine adjustment, two eye pieces, two objectives (one inch and quarter inch), all in polished mahogany case, offered by Messrs. Redington & Co., will be presented to the Senior student who stands second in the general average.

Tickets to the Second Course will be given to the Junior student who attains the highest average standing in the monthly examinations during his first course.

CONDITIONS OF GRADUATION.

Every person upon whom the Diploma of Graduate in Pharmacy shall be conferred, must be of good moral character, shall have attained the age of 21 years, and attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had, inclusive of the time of attendance at this College, four years' experience in a Pharmacy where prescriptions are compounded. No special examination will be held for candidates for the Degree,

but only an examination at the end of the regular course. Students failing to attend less than two thirds of the lectures in each chair will not be allowed to enter the final examinations.

He must present a *thesis* to the Dean on or before September first. The thesis must be an original dissertation upon some subject relating to Pharmacy or its collateral branches, or a chemical analysis conducted by himself. It must be written by the candidate himself, in the English language, and on the regular thesis paper furnished by the College, so as to admit of being bound uniformly with the others in volumes for preservation.

The title or subject of the thesis must be sent to the Dean on or before June first, to be approved or rejected by the Trustees and Faculty. Students are advised to select a suitable subject as early as possible, and to complete all the necessary experiments connected therewith during the winter vacation, so as to be able to give their full time to study during the second lecture-term. The professors, as well as the officers of the College, will, if called upon, aid the students in the selection of an appropriate subject.

Should the candidate fail to pass a satisfactory examination, the thesis will be returned to him, provided he apply for it within thirty days after the close of the examination.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the Degree is conferred (the College of Pharmacy being affiliated with the University).

Graduates of such medical colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy, and Botany, will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded. No Certificate of Proficiency in any subject will be issued, unless the applicant shall have attained as high a percentage of credits in such subjects as is required in the general average.

The time actually spent in attendance at lectures in this college (that is to say, the lecture seasons) will be considered as a part of the term of service. Persons employed in wholesale drug houses and manufacturing establishments may, in this way, avail themselves of the course of study offered by the College to make themselves familiar with matters which are of daily use in their voca-

tions, and receive evidence of their proficiency in the above branches. Certificates of Proficiency for successful candidates under twenty-one years of age, for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica, or Botany, must be paid for at the rate of two dollars each.

FEES.

Matriculation (paid but once)	$2 50
Botany (for each term)	12 50
Chemistry (for each term)	12 50
Pharmacy (for each term)	12 50
Materia Medica (for each term)	12 50
Diploma fee	10 00
Certificate of Proficiency	2 00
Latin (optional). Three months' ticket	4 50
Junior Quiz Class (optional) for the term	5 00
Senior Quiz Class (optional) for the term	6 00

The Diploma fee is to be paid when the candidate presents himself for examination for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

The Matriculation and Lecture Tickets must be taken out by each student in person, and must be indorsed by the several professors, the former within fifteen, and the latter within thirty days, from the beginning of the lecture course.

Members and Graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the Departments of the University of California, and in the Cooper Medical College, will be admitted to the lectures by matriculating, and paying only for the matriculation ticket.

Other Students, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case. be eligible for the Degree of Graduate in Pharmacy.

CHEMICAL LABORATORY.

This course comprises work in qualitative and quantitative analysis, requiring about twenty-eight lessons of three hours each during the term of fourteen weeks. The instruction commences with the general qualitative tests and reactions for bases and acids, the identification of chemical substances and the tests for impurities. Practical work will also be given in volumetric and urine

analysis. This course is optional, and is intended to embrace that part of analytical chemistry most useful to the Pharmacist. The use of apparatus and reagents is free, but a deposit of two dollars will be required of each student, to cover the value of apparatus damaged or destroyed.

Those students desiring a more advanced course in chemical analysis will receive ample facilities and assistance.

LABORATORY FEES,

Per month, for attending instruction in Qualitative and Quantitative Chemical Analysis; laboratory practice of three hours a day, from 10 o'clock A. M. to 1 o'clock P. M.

5 days each week, per month	$15 00
4 days	$12 00
3 days	$9 00
2 days	$6 00
1 day	$3 00

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in the Medical Department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 cents to 40 cents. Single furnished rooms may be had, without board, for from $5 to $10 per month.

EMPLOYMENT.

Temporary situations whilst attending college may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of students who desire situations, and all the officers of the College will use their influence to find employment for them.

TEXT-BOOKS.

U. S. Pharmacopœia, 1880.
Organic Materia Medica, by J. M. Maisch.
U. S. Dispensatory, by Wood, Remington, and Sadtler.
National Dispensatory, by Stille and Maisch.
Remington's Practical Pharmacy.
Thome's Botany.
Behr's Local Flora.
Richter's Inorganic Chemistry.
Richter's Organic Chemistry.

REFERENCE BOOKS.

Pereira's Materia Medica.
Attfield's Pharmaceutical Chemistry.
Fownes' Chemistry.
Roscoe's Elementary Chemistry.
Proctor's Lectures on Practical Pharmacy.
Gray's Lessons in Botany.
Gray's How Plants Grow.
Pharmacographia, Fluckiger and Hanbury.
Parrish's Practical Pharmacy.

CLASS OF 1886—SENIORS.

Name.	Nativity.	Preceptor.
Bond, Frederick O.	California	John Calvert.
Boswell, Frank M.	California	C. A. Bayly.
Bratton, Frederick O.	Illinois	G. F. Hanson.
Collins, Hugh	California	Dr. Heyermann.
Crew, Harry W.	California	P. C. Rossi.
Drossel, August A.	California	J. H. Drossel.
Emmal, William B.	California	
Friedhofer, William	California	R. E. White.
Gallwey, James A.	California	
Haman, Henry	California	W. Heick.
Hughes, Samuel F.	Pennsylvania	C. L. Steylaars.

Name.	Nativity.	Preceptor.
Hughes, Thomas H.	California	J. R. Gates & Co.
Molony, Edward J.	California	H. Staub.
Morgan, Charles L.	New York	J. J. McDonnell.
Nelson, John F.	California	Chas. Troppmann.
Skinner, Edwin E.	California	Powell & Skinner.

CLASS OF 1886—JUNIORS.

Name.	Nativity.	Preceptor.
Agnew, George M.	California	
Albee, Daniel P.	California	
Baxter, George P.	California	W. P. McDermott.
Bernstein, Max	Illinois	F. C. Keil.
Bodkin, Thomas P.	California	J. J. McDonnell.
Bowen, Charles P.	Iowa	
Bussenius, Adolph G.	California	
Driscoll, Frederick A.	California	Dr. Pring.
Flint, George E.	California	G. G. Burnett.
Francis, Willard	California	E. D'Artenay.
Frank, Richard	Nevada	W. B. Pixley.
Gates, Emery P.	California	J. H. Gates.
Gerdes, Henry G.	Germany	H. F. Prien.
Goodspeed, Miss Stella	Illinois	W. M. Searby.
Goux, Emile	California	E. W. Runyon.
Hall, Benjamin F.	California	J. H. Ralston.
Hambrock, Edward W.	Ohio	Medical Department, U. S. A.
Hanna, William S.	California	Val Schmidt & Co.
Hesemeyer, Frederick W.	Germany	W. F. Hurtzig.
Ing, John C., Jr.	California	E. W. Runyon.
Logan, Doctor Milburn H.	Illinois	
McGaughey, Miss Lizzie	Illinois	
McMurdo, John R.	England	
Michaels, Frederick	California	Langley & Michaels.
Mohun, Chas. C.	California	W. M. Searby.
Morgan, Henry	Missouri	Chas. Rogers.
Molony, James J.	California	Dr. H. C. Stoddart.
Nichols, Horace G.	California	
Perkins, Philip J.	California	A. McBoyle.
Ryland, Joseph R.	California (San José)	E. Norieza.
Samuels, Edward H.	New Zealand	W. T. Wenzell.
Seifert, Charles H.	Iowa	Dr. H. W. Dodge.
Snowball, Alex. L.	California	J. H. Gates.
Springsteen, Benjamin	California	C. M. Barrington.
Warren, Joseph S.	California	W. T. Kibler.
Watt, James	California	Langley & Michaels.
Weitman, Charles L.	Ohio	D. Ryan.
White, Thomas J.	California	Dr. McCarthy.
Wulzen, Dietrich H.	California	

GRADUATES.

Name.	Date of Graduation.	Thesis.
Adair, Wm. H.	1881	Extract of malt.
Argenti, J. J. B.	1881	The olive and its product.
Bacon, Gaston E.	1875	Analysis of tincture of opium.
Barbat, Josephine E.	1884	Apium graveolens.
Barbat, J. H.	1880	Taraxacum leaves and root.
Bauer, Fred. C.	1877	Analysis of well water.
Ball, Henry A.	1884	Analysis of Wilhoit mineral water.
Ball, Robert L.	1882	Bitter bark from San Salvador.
Beckett, Arthur F.	1883	Hydrobromic acid.
Besthorn, H. E. D.	1884	Alpinia officinarum.
Burnett, G. G.	1879	Rhamnus purshiana.
Barrington, Chas. L.	1882	Vitis vinifera.
Bond, Frederick T.	1886	Analysis of bitartrate of potassium.
Boswell, Frank M.	1886	Acidum boricum.
Bratton, Frederick O.	1886	Antipyrin.
Beaizley, George T.	1885	Abrus precatorius.
Chard, Geo. R.	1881	Iodoform.
Cody, Nelson A.	1881	Croton procumbens.
Curragh, John M.	1877	Damiana.
Calegaris, Joseph	1882	Punica granatum.
Devine, John	1877	Seidlitz powders.
DeWitt, James M.	1881	Pharmaceutical ethics.
Dick, William H.	1884	Chamæcyparis lawsoniana.
Dignan, Michael H.	1883	Analysis of a sulphuretted mineral water.
Drossel, August A.	1886	Chlorophyll.
Dubois, Paul A.	1880	Grindelia robusta.
D'Artenay, Eugene	1882	Berberis aquifolium.
Davis, William J.	1885	Artemisia abrotanum.
Dorrance, Ralph G.	1885	Rhamnus purshiana.
Elwert, Chas. P.	1881	Gelsemium sempervirens.
Fevrier, J. P.	1881	Jarborandi.
Fitzell, Charles R.	1883	Humulus lupulus.
Fletcher, David M.	1881	Assays of Cinchona bark.
Gove, D. M.	1881	A well arranged pharmacy.
Graham, Thomas D.	1875	Oxtropis campestris.
Grazer, F. A.	1880	Berberis acquifolium.
Green, Franklin T.	1882	Analysis of well water.
Green, John A.	1883	Melaleuca hypericifolia.
Hammit, Chas. H.	1881	Analysis of Piedmont Spring water.
Harris, Henry R.	1876	Hydrocyanic acid.
Helke, W. S.	1878	Erythroxylon cocoa.
Heany, J. P.	1874	Oreodaphne Californica.
Hughes, Samuel F.	1886	Solanum umbelliferum.
Hughes, Thomas H.	1886	Prunus ilicifolia.
Hulting, B. F.	1880	Arctostaphylos glauca.

Name.	Date of Graduation.	Thesis.
Hurtzig, W. F. N.	1881	Chloroform.
Happersberger, Eml.	1882	Cinchona culture in California.
Harmann, Paul T.	1885	Assay of citrate of iron and quinia.
Jones, Morgan L.	1883	Agave Americana.
Joy, Edwin W.	1878	Fluid extracts by re-percolation.
Judson, Russell H.	1882	Carica papaya.
Kahn, Adolph J.	1875	Pharmaceutical education.
Korper, Harry W.	1883	Boldoa fragrans.
Krause, Fred'k L.	1884	Aqua menthæ piperitæ.
Leber, Albert L.	1884	Euphorbia ocellata.
Lengfeld, Felix	1880	Assays of opium.
Leszynsky, Samuel	1880	Peptone.
Levison, Charles G.	1884	Euphorbia pilulifera.
Lindsay, Fred'k G.	1883	Schinos molle.
Loehr, George W.	1884	Qualitative and quantitative tests of drugs.
Lustig, Danl. David	1881	Heteromeles arbutifolia.
Mathewson, J. McL.	1879	Mitchella repens.
McDonnell, S. A.	1878	Dialysed iron.
†McLean, F. P.	1875	Analysis of magnesites.
McLaughlin, W. H.	1878	Eriodictyon Glutinosum.
Mervy, Emile C.	1879	Lupinus chamissonis.
Messing, L. J.	1879	Eucalyptus globulus.
Meyers, Robt. C.	1875	Sesame oil and its uses.
Minor, Geo. W.	1879	Larrea Mexicana.
Molony, Edward J.	1886	Ferri oxydum sacchratum solubile.
Morrison, W. P.	1880	Table of solubilities.
Moore, Berkley W.	1883	Pyrethrum cinerariæfolium.
Moore, C. C.	1878	Analysis of soil.
Morgan, Charles L.	1886	Tincture of nux vomica.
Munson, James G.	1884	Volumetric tests of arsenical preparations.
Murphy, Martin J.	1881	Amygdalus communis.
Meyer, August W.	1885	Spacele calcina.
Mayer, Oscar J.	1885	Dirca occidentalis.
Newby, Thomas S.	1884	Chenopodium Californicum.
Oberdeener, Geo.	1884	Rumex hymenosepalus.
Oberdeener, Samuel	1880	Pharmaceutical notes.
Parker, E. S.	1878	Aspidium argutum.
Patton, William J.	1885	Analysis of Harden & Lewis' Fire Grenades.
Prien, Harry F.	1885	Oleum Theobromæ.
Ray, Fred. E.	1876	California opium.
Reilly, Paul H.	1883	Tannic acid.
Rimpau, Frank T.	1883	An assay of ore.
Rogers, Nathan	1876	Sium latifolium.
Roturier, Emile	1883	Piperidine.
Reilly, Eugene C.	1885	The production of oil of eucalyptus in California.
Scholl, A. L.	1881	Zygadenus fremontii.

Name.	Date of Graduation.	Thesis.
Selzer, Edward	1877	Percolation vs. maceration.
Skinner, Robert W.	1883	Semen bardanæ.
Smith, Arthur H.	1879	Fucus nodosus.
Sommer, Adolph	1879	Calcium cyanide.
Schmelz, Charles J.	1885	Audibertia grandiflora.
Skilling, Harry H.	1885	Eucalyptus globulus.
Skinner, Edwin E.	1886	Arctostaphylos uva ursi.
Troppmann, Chas. M.	1881	Rhododendron occidentale.
Tryon, Jas. W.	1882	Mimulus glutinosus.
*Turner, Guy S.	1885	Examination of bromide of potassium.
Topley, James H.	1885	Volumetric estimation of ammonium, potassium, and sodium hydrates.
†Vreeland, Ph. L.	1879	Syrupus ferri iodidi.
Young, Wilfred M.	1882	Megarrhiza Californica.
*Wall, Henry A.	1883	Erythroxylon coca.
Walsh, Andrew D.	1884	Malva rotundifolia.
Weiss, Philip	1878	Leeches.
Whitney, William B.	1884	Euphorbia eremocarpus.
Wight, David	1882	California drug law.
Zemansky, J. H.	1878	Nicotiana tabacum.

* Certificate of proficiency. † Deceased.

GRADUATING CLASS, 1886.

Frederick T. Bond.	Samuel F. Hughes.
Frank M. Boswell.	Edward J. Molony.
Frederick O. Bratton.	Charles L. Morgan.
August A. Drossel.	Edwin E. Skinner.

Thomas H. Hughes.

Frederick O. Bratton received the First Prize of a Gold Medal.

Edwin E. Skinner received the Second Prize of Roscoe & Schorlemmer's Chemistry, 5 vols.

OFFICERS OF THE ALUMNI ASSOCIATION OF THE CALIFORNIA COLLEGE OF PHARMACY.

PRESIDENT:

FREDERICK A. GRAZER.

VICE-PRESIDENT:

F. ARTHUR BECKETT.

SECRETARY:

EUGENE D'ARTENAY.

TREASURER:

DAVID M. FLETCHER.

EXECUTIVE COMMITTEE:

(Elected for two years.)

1886 TO 1888:	1887 TO 1889:
H. F. PRIEN.	J. G. MUNSON.
C. M. TROPPMANN.	S. F. HUGHES.

ROLL OF MEMBERS OF THE ALUMNI ASSOCIATION.

		CLASS.
ADAIR, WM. H.	327 Montgomery Street, San Francisco	1881.
ARGENTI, J. J. B.	S. E. corner Third and Folsom Sts., San Francisco	1881.
BACON, G. E.	S. W. cor. Sutter and Dupont Sts., San Francisco	1875.
BARBAT, J. H.	910 Pacific Street, San Francisco	1880.
BARBAT, JOSEPHINE E.	910 Pacific Street, San Francisco	1884.
BECKETT, F. A.	529 Market Street, San Francisco	1883.
BESTHORN, H. E. D.	65 Minna Street, San Francisco	1884.
BOSWELL, FRANK M.		1886.
CALEGARIS, J.	S. E. cor. Kearny and Pacific Sts., San Francisco	1882.
D'ARTENAY, E.	N. E. cor. Post and Mason Sts., San Francisco	1882.
DEVINE, JOHN	S. E. cor. Kearny and Clay Sts., San Francisco	1877.
DICK, W. H.	234 Sutter Street, San Francisco	1884.
DIGNAN, M. H.	603 Montgomery Street, San Francisco	1883.
DROSSEL, AUGUST H.	N. W. cor. Powell and Jackson Sts., San Francisco	1886.
DUBOIS, P. A.	Cor. Kearny and Washington Sts., San Francisco	1880.
DAVIS, W. J.	102 Eddy Street, San Francisco	1885.
ELWERT, C. P.	221 Post Street, San Francisco	1881.

		Class.
Fletcher, D. M.	Cor. Geary and Stockton Streets, San Francisco	1881.
Fevrier, J. P.	1124 Stockton Street, San Francisco	1881.
Gove, D. M.	N.W. cor. California and Fillmore Sts., San Fran'co	1881.
Grazer, F. A.	Sixth and Harrison Streets, San Francisco	1880.
Green, F. T.	Austin, Nevada	1882.
Happersberger, E.	532 Stevenson Street, San Francisco	1882.
Hughes, Sam. F.	19 Hampton Place, San Francisco	1886.
Hughes, Thos.	7 and 9 Front Street, San Francisco	1886.
Hulting, B. F.	Third and Folsom Streets, San Francisco	1880.
Hurtzig, W. F. N.	140 Third Street, San Francisco	1881.
Harris, H. R.	S. E. cor. Market and Steuart Sts., San Francisco	1876.
Jones, M. L.	Cherokee Flat, California	1883.
Joy, Edwin W.	852 Market Street, San Francisco	1878.
Judson, R. H.	320 Sansome Street, San Francisco	1882.
Kahn, A. J.	126 Kearny Street, San Francisco	1875.
Korper, H. W.	Cor. Post and Dupont Streets, San Francisco	1883.
Krause, F. L.	Chico, California	1884.
Leber, A. L.	Seventh and Market Streets, Oakland, California	1884.
Leszynsky, S. L.	2 Battery Street, San Francisco	1880.
Loehr, G. W.	Cor. Geary and Jones Streets, San Francisco	1883.
Lustig, D. D.	Cor. Natoma and Sixth Streets, San Francisco	1881.
McDonnell, S. A.	327 Montgomery Street, San Francisco	1878.
Minor, G. W.	N. E. cor. Turk and Taylor Sts., San Francisco	1879.
Moore, C. C.	Stockton, California	1878.
Molony, Edward J.	221 Post Street, San Francisco	1886.
Munson, J. G.	859 Market Street, San Francisco	1884.
Mayer, O. T.	——— Street, San Francisco	1885.
Newby, T. S.	San Buenaventura, California	1884.
Oberdeener, S.	Santa Clara, California	1880.
Oberdeener, Geo.	Stockton, California	1884.
Prien, H. F.	Cor. Hayes and Laguna Sts., San Francisco	1885.
Ray, F. E.	Sacramento, California	1876.
Reilley, P. H.	Oakland, California	1883.
Roturier, E.	318 Montgomery Avenue, San Francisco	1883.
Scholl, A. L.	Cor. Nineteenth and Mission Sts., San Francisco	1881.
Sommer, Ad.	Berkeley, California	1879.
Skilling, H. H.	Oakland, California	1885.
Skinner, Edwin E.	Cor. Post and Mason Sts., San Francisco	1886.
Troppmann, C. M.	S. W. cor. Sixth and Folsom Sts., San Francisco	1881.
Topley, J. H.	Vallejo, California	1885.
Turner, G. S.	Modesto, California	1885.
Wall, H. A.	Vancouver, Washington Territory	1883.
Walsh, A. D.	San Mateo, California	1884.
Wight, D.	Monterey, California	1882.
Whitney, W. B.	Healdsburg, California	1884.

Members are requested to notify the Secretary of any change in residence.

ALPHABETICAL LIST OF THE COLLEGES OF PHARMACY OF THE UNITED STATES,

Whose diplomas are granted only when the student possesses, in addition to the theoretical or scientific knowledge required by study, a practical knowledge of the apothecary business, obtained by actual experience for several years previous to examination.

Albany College of Pharmacy	Albany, N. Y.
California College of Pharmacy	San Francisco, Cal.
Chicago College of Pharmacy	Chicago, Ill.
Cincinnati College of Pharmacy	Cincinnati, O.
Louisville College of Pharmacy	Louisville, Ky.
Maryland College of Pharmacy	Baltimore, Md.
Massachusetts College of Pharmacy	Boston, Mass.
National College of Pharmacy	Washington, D. C.
New York College of Pharmacy	New York, N. Y.
Philadelphia College of Pharmacy	Philadelphia, Pa.
Pittsburg College of Pharmacy	Pittsburg, Pa.
St. Louis College of Pharmacy	St. Louis, Mo.

UNIVERSITY OF CALIFORNIA.

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FACULTY.

EDWARD S. HOLDEN, LL.D., President of the University.

G. A. SHURTLEFF, M.D., Emeritus Professor of Mental Diseases and Medical Jurisprudence.

R. BEVERLY COLE, A.M., M.D., M.R.C.S., Eng., Professor of Obstetrics and Gynecology.

M. W. FISH, M.D., Professor of Physiology and Microscopy.

W. F. MCNUTT, M.D., M.R.C.P., Edin., etc., Professor of Principles and Practice of Medicine.

ROBERT A. MCLEAN, M.D., Professor of Clinical and Operative Surgery.

W. E. TAYLOR, M.D., Professor o Principles and Practice of Surgery.

GEORGE H. POWERS, A.M., M.D., Professor of Ophthalmology and Otology.

F. B. KANE, M.D., F.R.C.S.I., Professor of Clinical Medicine and Pathology.

A. L. LENGFELD, M.D., Professor of Materia Medica and Medical Chemistry.

WILLIAM B. LEWITT, M.D., Professor of Anatomy.

BENJAMIN R. SWAN, M.D., Professor of Diseases of Children.

WILLIAM H. MAYS, Professor of Mental Diseases and Medical Jurisprudence.

WASHINGTON AYER, M.D., Professor of Hygiene.

W. W. KERR, M.D., Professor of Therapeutics.

L. A. SABEY, M.D., Curator.

JOHN G. DAY, M.D., Demonstrator of Anatomy.

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LUKE ROBINSON, M.D., M.R.C.P., Eng., Medicine.

ARNOLD A. D'ANCONA, A.B., M.D., Assistant to the Chair of Physiology.

WINSLOW ANDERSON, M.D., Assistant to the Chair of Materia Medica and Medical Chemistry.

HENRY W. DODGE, M.D., Assistant to the Chair of Clinical Medicine and Pathology.

JULES SIMON, M.D., Assistant to the Chair of Mental Diseases and Medical Jurisprudence.

For annual announcement, address—

ROBERT A. McLEAN, M.D., Dean,
603 Merchant Street, corner of Montgomery,
San Francisco, California.

UNIVERSITY OF CALIFORNIA.

COLLEGE OF DENTISTRY.

TOLAND HALL, STOCKTON STREET, BETWEEN FRANCISCO AND CHESTNUT STREETS, SAN FRANCISCO, CALIFORNIA.

FACULTY.

E. S. Holden, LL.D., President of the University, and ex officio President of the Faculty.

Joseph Le Conte, M.D., LL.D., Honorary Professor of Biology.

S. W. Dennis, M.D., D.D.S., Professor of Operative Dentistry and Dental Histology.

C. L. Goddard, A.M., D.D.S., Dean and Professor of Mechanical Dentistry.

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Charles Boxton, D.D.S., M. F. Gabbs, D.D.S., Demonstrators of Mechanical Dentistry.

John G. Day, M.D., Demonstrator of Anatomy.

Arnold A. D'Ancona, A.B., M.D., Assistant to the Chair of Physiology.

Winslow Anderson, M.D., Assistant to the Chair of Materia Medica and Medical Chemistry.

CLINICAL INSTRUCTORS.

H. C. Davis, D.D.S.
B. W. Haines, M.D., D.D.S.
W. B. Kingsbury.
Thos. Morffew, D.D.S.
W. E. Price, D.D.S.
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H. S. Plomteaux, D.D.S.
Jno. Rabe, D.D.S.
Max Sichel.
W. Wood.

(The season of 1887 begins March seventh, and ends November thirtieth.)

REQUIREMENTS FOR ADMISSION.

Every candidate for admission must be eighteen years of age, must present to the Faculty satisfactory evidence of a good moral character, and must be examined as to his previous education and fitness to appreciate the technical study of Dentistry. The examinations will be chiefly in writing, and will embrace the following subjects, viz.: Arithmetic, Geography, English Grammar and Composition, United States History, Natural Philosophy, and Chemistry.

JUNIOR EXAMINATIONS.

At the end of the Junior year students will be examined in Anatomy, Physiology, Chemistry, Histology, and Mechanical Dentistry, and those who are qualified will receive certificates of admission to the Senior Class.

REQUIREMENTS FOR GRADUATION.

The candidate for the degree of Doctor of Dental Surgery must have attained the age of twenty-one years, and be of good moral character.

He shall have passed a satisfactory examination, both oral and written.

He shall have studied Dentistry *three* years, including the time spent in attending lectures.

He shall have attended two full courses in the Dental Department of the University of California, or one year in some other reputable Dental College, and the second or last in this college.

Graduates in medicine may apply for the Degree of Doctor of Dental Surgery after having had two full years of practical instruction or experience in dentistry, one year of which, including one course of lectures, must be spent in the Dental Department of the University of California.

After these requirements have been complied with, upon the recommendation of the Faculty and approval of the Board of Regents, the candidate shall receive the Degree of Doctor of Dental Surgery.

FEES.

The Matriculation Fee will be (paid once)	$ 5 00
Tuition, first year	120 00
Tuition, second year	120 00
Tuition, third year	Free.
Demonstrator of Anatomy's Fee, each year	10 00
Diploma Fee	30 00

C. L. GODDARD, Dean,
131 Post Street, San Francisco, Cal.

QV
1889

ANNOUNCEMENT

OF THE

SEVENTEENTH ANNUAL SESSION

OF THE

California College of Pharmacy

113 FULTON STREET, SAN FRANCISCO, CAL.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

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FEB 26 1931
UNIVERSITY OF ILLINOIS.

SESSION OF 1889.

COMMENCING MONDAY, APRIL 1st.

Alumni of this College,
and others who wish to receive the ANNOUNCEMENT are requested to
forward their names and addresses to the Dean.

LICK OBSERVATORY
APR 20 1889
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1889.

CALIFORNIA

COLLEGE OF PHARMACY.

(Department of Pharmacy, University of California.)

The College building is located at 113 Fulton street, near the New City Hall.

Correspondence to be addressed to

EDWARD W. RUNYON, DEAN,
53 Stevenson Street,
San Francisco, Cal.

ANNOUNCEMENT

OF THE

SEVENTEENTH ANNUAL SESSION

OF THE

California College of Pharmacy

113 FULTON STREET, SAN FRANCISCO, CAL.

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SAN FRANCISCO:
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1889.

OFFICERS

OF THE

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SECRETARY:

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TREASURER:

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JOHN CALVERT. F. C. KEIL.
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FACULTY

OF THE

CALIFORNIA COLLEGE OF PHARMACY.

HORACE DAVIS, A.B.,
President of the University of California.

WILLIAM T. WENZELL, M.D., PH.G., PH.M.,
Professor of Chemistry,
No. 532 Market Street.

HERMANN H. BEHR, M.D.,
Professor of Botany,
No. 509 Kearny Street.

WILLIAM M. SEARBY,
Professor of Materia Medica,
No. 859 Market Street.

EDWARD W. RUNYON, PH.G.,
Professor of Theory and Practice of Pharmacy—DEAN OF THE FACULTY,
No. 53 Stevenson Street.

ASSISTANTS.

ASSISTANT IN CHEMISTRY.....FRANK T. GREEN, PH.G.
ASSISTANT IN PHARMACY HENRY E. BESTHORN, PH.G.
ASSISTANT IN MATERIA MEDICA, JEROME J. B. ARGENTI, PH.G.
ASSISTANT IN BOTANY.....JOSEPHINE E. BARBAT, PH.G.

INSTRUCTOR IN LATIN.

W. C. GREGORY, A.B.

PREFATORY.

The Trustees of the California College of Pharmacy take pleasure in presenting to the Pharmacists and Druggists of the Pacific Coast the annual announcement for the Seventeenth Course of Lectures, instituted with special reference to the acquisition of the scientific knowledge and manipulative skill required for the identifying, testing, preparing and dispensing of medicines.

The Trustees point with pleasure to the important advancement made in the course of instruction. In the present session the number of lectures will be considerably increased, and the want so long felt of practical work in the Laboratory will be supplied. Arrangements have been made by which the Laboratory will be fully equipped for the reception of students by the time the term commences.

The advantage of a Preliminary Examination, before admitting students to the College, is now fully recognized as a step in the right direction. The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one who has any prospect of becoming a moderately proficient student. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have the necessary common school education to enable them to take up with profit the more advanced studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to obtain the proper education, employers should insist upon their making up the deficiency in this respect without delay. As young men are recommended not to enter the College until they are eighteen years of age, those who intend to make pharmacy their vocation should use their spare time before they reach that age in obtaining, at least, a good common school education, if they have not already done so. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. They should also master the rudiments of Latin, so that, if possible, they may not need to devote any time during lecture term to this subject. As yet, however, the Trustees do not insist upon students passing an examination *in Latin* previous to entering the College, though probably they will do so in a few years. In the meantime an Instructor in Latin has been appointed, for the benefit of those who postpone this examination until

the close of the term. This position is very ably filled by Mr. W. C. Gregory, whose experience as a teacher, and whose acquaintance with pharmaceutical Latin give him exceptional fitness for the office. Young men in drug stores, whether students of the College or not, are advised to join his class, if they have not already acquired a sufficient knowledge of Latin, and pharmacists in this city will do well to direct the attention of their employes to this opportunity.

Applications are frequently made by persons who wish to enter the College before they have had any experience in pharmacy. In all such cases the Trustees advise the applicants to find employment in a drug store for at least a year before attending lectures. The practical knowledge thus gained enables students to understand the lectures better, and therefore to make more satisfactory progress. At the same time those who lack the necessary qualifications for passing the Preliminary Examination, should devote their spare hours to preparing themselves for it. The attention of employers is directed to this matter, and their co-operation earnestly requested.

The complete division of the students into two classes—Junior and Senior—which has been in operation the past six years, has proved very beneficial, though adding greatly to the labors of the Faculty. The Trustees believe that the more fully they can carry out a graded system of instruction, the better will it be for the students. The Modified Examinations now provided for will enable some who may be willing to take three or four years to complete their college course, to divide the studies as may best suit their circumstances.

A system of periodical examinations was inaugurated five years ago, with great advantage. These examinations will be held bi-monthly during the lecture season, and the Faculty will be assisted in conducting them by four committees of the Board of Trustees—one for each chair. This plan is adopted with the hope that it will stimulate earnest, continuous study from the very opening of the term to its close.

On the recommendation of the Alumni Association of this College, the Trustees have directed the appointment of an assistant for each chair to assist the students in reviewing the lectures of the several Professors. Such reviews, when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment as well as the profit of associated study.

Contrary to the custom in Eastern and Western Colleges of Pharmacy, the lectures of this College are delivered in the summer months.

This enables the Professor of Botany to give his instructions by demonstration in Field Botany at the same time that the other lectures are given. It is the season when business in this city is lightest, thus rendering it more easy for clerks to find time to attend lectures and to study at home.

San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and here is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

The new College building is a matter of pride and satisfaction to all who are interested in pharmaceutical education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is centrally located, being on Fulton street, west of Polk—near the New City Hall, and is easily reached by several lines of cable and horse cars. Though not large, it provides sufficient accommodation for the College for some years to come. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the Professors; back of these is a Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory, of the same size. On the same floor are two rooms, used by the students in their various classes; also, for meetings of committees, and for other purposes. The third story consists of a small dwelling of five rooms, where the Curator resides. Increased facilities for instruction are being provided from time to time. Several additions were made during the past year, including valuable *materia medica* specimens. Among the recent acquisitions are an oxyhydrogen lantern, some new apparatus for illustration in Physics and Chemistry, Bausch and Lomb's Laboratory Microtome, a complete set of Lachman's Photographs of living medicinal plants, and a number of charts for use in the different departments.


Library & Museum

ANNOUNCEMENT.

PRELIMINARY EXAMINATION—MATRICULATION.

Every applicant for admission to the regular course for graduation at this College will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography, and arithmetic.

Candidates will therefore be at the College on

FRIDAY, MARCH 29TH, AT 9 A. M.,

For the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above mentioned branches.

PERIODICAL EXAMINATIONS DURING THE SESSION.

The system of written examinations at stated intervals adopted by this College has been highly beneficial. These examinations will take place bi-monthly, in each of the subjects lectured upon by the several Professors, and quarterly in the reading and translating of Latin prescriptions.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees ; and the average rating of students, as shown by the results thus obtained, will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

THE LECTURES

Will be delivered in the halls of the College of Pharmacy, 113 Fulton Street, between Polk and Van Ness Avenue, on Monday, Wednesday

and Friday evenings, with daylight demonstrations in Botany on Thursdays, from 11:30 A. M. to 2 P. M.; commencing Monday, April 1st, and terminating about the end of September. In order that students may derive the fullest benefits from the lectures, they should be present at the opening of the session.

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M.D., PH.G., PH.M.

The lectures to the Junior Class will be delivered on Mondays, at 7 to 8 o'clock P. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, to which will be included the electro-chemical theory, the equivalents of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmacal student.

The lectures to the Senior Class will be delivered on Wednesdays and Fridays at 7 to 8 o'clock P. M.

In the Senior course the student will be instructed in the more advanced departments of chemical philosophy; molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives: the alcohols, ethers, acids, glucosides, alkoloids, etc., will receive their due share of attention.

MATERIA MEDICA.

PROFESSOR WILLIAM M. SEARBY.

The lectures will be delivered to the Junior Class every Wednesday, from 9 to 10 o'clock P. M., and will begin by referring to drugs derived from the vegetable kingdom. These will be taken up according to the natural orders under which the plants are classed from which they are obtained. The distinguishing characters of each of the natural orders will be considered, and a complete description of the parts of the plants used and officinally recognized will be given; and also their physical properties, uses and doses.

Their commercial source, period of collection, their selection as to quality, and the manner of preserving, will be referred to. The latter part of the term will be devoted to the study of the drugs of animal origin officinally recognized. They will be fully considered as to their source, description, mode of collection, constituents, medical properties, doses, and preparations.

The lectures for the Senior Class will be delivered every Wednesday, 8 to 9 P. M., and Tuesday, 11:30 A. M. to 12:30 P. M., and full description of the officinal drugs derived from the vegetable kingdom will be given. These will receive particular attention in regard to their general and histological structure, and chemical constituents, which offer the most reliable means of identifying and distinguishing the different drugs, and of recognizing adulterations or admixtures. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration. Tests such as may be of practical interest will be frequently made before the class.

Microscopic structures will be illustrated by means of diagrams and drawings and the use of the oxy-hydrogen lantern.

The study of drugs will, in this term, be taken up according to their structural characters, commencing with roots, and following in order with rhizomes, tubers, bulbs, stems, woods, etc.

The students will, at stated intervals, be required to identify and distinguish drugs.

BOTANY.

PROFESSOR HERMANN H. BEHR, M.D.

The lectures will be delivered on Thursday of each week, at 11:30 A. M. and 1 P. M. The lectures will include elementary, structural and systematic botany, and the geography of plants. In addition to these weekly lectures, excursions into the country will be made every fortnight during the session, for the purpose of eollecting and studying indigenous plants, under the direction of the Professor.

For those students having especial interest for botany, lectures and excursions will begin on February 28th, as much of the flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

THEORY AND PRACTICE OF PHARMACY.

PROFESSOR EDWARD W. RUNYON, PH.G.

Lectures to the Junior Class on Mondays, 8 to 9 P. M., and to the Senior class on Mondays, 9 to 10, and Fridays, 8 to 9 P. M.

The Junior course of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms, and a review of the history of the United States Pharmacopœia, as well as a consideration of text books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France, and Germany—also Specific Gravity and the means and apparatus necessary for its determination—will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical questions, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected ; the principles of solution, filtration, clarification, and decoloration, neutralization, crystallization, precipitattion and dialysis. Following this, the important subjects of digestion, infusion, maceration, percolation, and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

The Senior Course of pharmacy lectures will treat directly and systematically of the prescriptions of the Pharmacopœia, introducing, from time to time, those principles taught in the Junior Course, and necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture, and employment, the adulterations and sophistications to which they are subject, and the methods for their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration will be brought into use, and every effort made to familiarize the student with the subject under consideration. One or two lectures will be given upon the im-

portant subjects of toxicology and examination of urine; also upon the testing of pharmacopœial preparations by means of reagents and volumetric solutions.

The lecturer has made arrangements with several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refineries, drug mills, etc., to accompany the Senior Class of students where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize them with matters which are usually imperfectly explained in lectures and text-books.

SCHEDULE OF LECTURES.

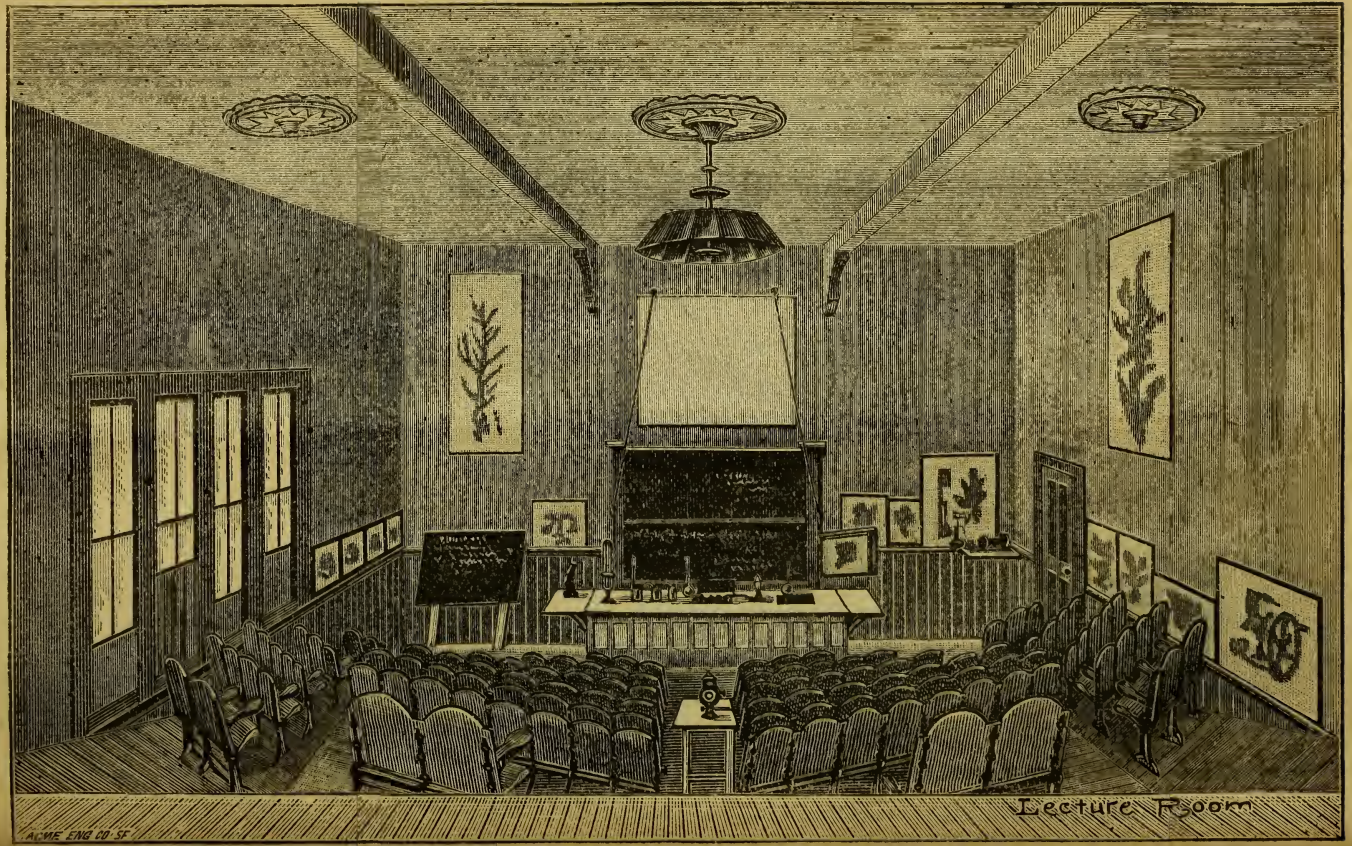
MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
P. M. 7 to 8—Chemistry. *Juniors.*	A. M. 11:30 to 12:30—Materia Medica. *Seniors.*	P. M. 7 to 8—Chemistry. *Seniors.*	A. M. 11:30 to 12:30—Botany. *Seniors.*	P. M. 7 to 8—Chemistry. *Seniors.*
8 to 9—Pharmacy. *Juniors.*		8 to 9—Materia Medica. *Seniors.*	P. M. 1 to 2—Botany. *Juniors.*	8 to 9—Pharmacy. *Seniors.*
9 to 10—Pharmacy. *Seniors.*		9 to 10—Materia Medica. *Juniors.*		

ALUMNI REVIEW CLASSES.

Several members of the Alumni Association of the College, to be appointed by the Faculty, will conduct the Class Reviews on Monday, Tuesday, Wednesday and Thursday, after the close of the lecture, as follows:

MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.
P. M. 9 to 10—Chemistry and Materia Madica (alternating). *Juniors.*	P. M. 12:30 to 1:30—Pharmacy and Botany (alternating). *Seniors.*	P. M. 9 to 10—Chemistry and Materia Medica (alternating). *Seniors.*	P. M. 12:30 to 1:30—Pharmacy and Botany. (alternating). *Juniors.*

Attendance upon these reviews is obligatory. They do much to refresh the memory upon the subjects that have been taught, difficulties are discussed and overcome, and an impetus is given to study


Lecture Room
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that would not otherwise occur. In many respects the student will derive much benefit by this systematic examination under the direction of those who have already graduated from a College of Pharmacy.

LATIN.

Many persons having entered upon the profession of Pharmacy with little or no knowledge of Latin, the Trustees have appointed an instructor to teach the rudiments of this language, and such technical use of it as will enable the student to read physicians' and Latin Pharmacopœias with accuracy. Attendance upon this class is optional. Nevertheless, as the correct reading of prescriptions forms a part of the practical examination for the degree, it is required that the student should, at some period, obtain a fair knowledge of rudimentary Latin. Those who have been members of this class in previous years derived much benefit from the instruction they received, and the Trustees recommended all whose early advantages in this department have been limited, to make up the deficiency during the College course, if they have not done so before.

EXAMINATIONS.

Preliminary Examination, see page 9.
Periodical Examination during the session, page 9.

JUNIOR EXAMINATION.

(FOR ADMISSION TO THE SENIOR CLASS.)

Junior students whose rating in the bi-monthly and final examination above referred to (see page 8) shall be found to show a satisfactory proficiency and degree of progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Juniors failing to receive a sufficiently high rating to warrant their admission to the Senior Class will be required to pass an examination at the commencement of the next lecture term in those branches only in which their rating at the previous examinations may have been insufficient. If the results of this examination shall show that they have, by study, made good their deficiency, they will then be permitted to enter the Senior Class.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, will be required to pass the *Junior Examination.*

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a MODIFIED JUNIOR EXAMINATION.

A student having attended *one full course* of lectures in the Junior Class, may, at the end of this course, select of the parts into which the Junior Examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, "Committee"), any number, not less than two, in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty, on or before September the first. If he pass in all the branches selected by him, the results will be placed to his credit; and at the close of the following term he may present himself for examination in the remaining branches, and if he pass also in these, he will be entitled to join the Senior Class. But no student will be allowed to enter the Senior Class, in any branch, until he shall have passed in all the branches of the Junior Class. If, at the first partial examination, he should fail at any branch selected, he will be re-examined in this branch also dnring his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

SENIOR EXAMINATION.

The Senior Class will be examined at the end of the session, for the degree of Graduate of Pharmacy, in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters of Drugs, their doses and uses, Theoretical and Practical Pharmacy, and the Translation of Recipes from Latin into English, and from English into Latin. The practical examination will include the actual compounding of Prescriptions, and the manipulation of Drugs and Chemicals in the presence of the Examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student, having attended at least *two full courses* of lectures, may, at the end of the Senior course, present himself for examination in CHEMISTRY, BOTANY and MATERIA MEDICA (including

the identification of specimens), reserving the remainder of his examination (THEORETICAL and PRACTICAL PHARMACY, and "COMMITTEE,") until a subsequent year. He must give notice, in writing, to the Dean, on or before September first, of his intention to so divide his examination. If he pass in any or all of these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term, he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the Degree of Graduate in Pharmacy.

CONDITIONS OF GRADUATION.

Every person upon whom the diploma of Graduate in Pharmacy shall be conferred must be of good moral character, shall have attained the age of 21 years, and attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had, inclusive of the time of attendance at this College, four years' experience in a pharmacy where prescriptions are compounded, and must have attended the Senior Laboratory Course of this College. No special examination will be held for candidates for the degree, but only an examination at the end of the regular course. Students failing to attend less than two-thirds of the lectures in each chair will not be allowed to enter the final examinations.

He must present a *thesis* to the Dean on or before September first. The thesis must be an original dissertation upon some subject relating to Pharmacy or its allied branches, or a chemical analysis conducted by himself. It must be written by the candidate himself, in the English language, aud on the regular thesis paper furnished by the College, so as to admit of being bound uniformly with the others in volumes for preservation.

The title or subject of the thesis must be sent to the Dean on or before June first, to be approved or rejected by the Trustees and Faculty. Students are advised to select a suitable subject as early as possible, and to complete all the necessary experiments connected therewith during the winter vacation, so as to be able to give their full time to study during the second lecture term. The Professors, as well as the officers of the College, will, if called upon, aid the students in the selection of an appropriate subject.

Each applicant (for a Diploma) must pay an examination fee of ten dollars, and furnish certificates or other satisfactory evidence as to age and time of service.

Those who fail to appear for examination, or who do not pass satisfactorily, will be allowed to present themselves at any subsequent examination without further charge.

No person will be allowed to present himself for examination for the Degree until all his dues to the College are paid.

Should the candidate fail to pass a satisfactory examination, the thesis will be returned to him, provided he apply for it within thirty days after the close of the examination.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the Degree is conferred (the College of Pharmacy being affiliated with the University).

Graduates of such medical colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the Degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy and Botany, will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded. No Certificate of Proficiency in Pharmacy will be issued, excepting where all the branches have been satisfactorily passed. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subjects as is required in the general average.

Certificates of Proficiency for successful candidates under twenty-one years, for those who have not had four years experience, or for those who have passed in Chemistry, Materia Medica or Botany, must be paid for at the rate of two dollars each.

PRIZES.

Four prizes will be awarded at the close of the term as follows:

Senior Class.

To the student whose examination shall be satisfactory in every department, and who shall attain the highest general average at the periodical and final examinations, *a gold medal*, offered by the Faculty.

To the student whose examination shall be satisfactory in every department, and who shall stand second in the general average at the periodical and final examinations, *books or apparatus to the value of twenty dollars*, offered by Mr. W. S. Zeilin.

To the student who shall pass the best examination in Practical Pharmacy (including the actual compounding of prescriptions and the Identification of specimens of drugs, chemicals and pharmaceutical preparations), *books or apparatus of the value of twenty dollars*, offered by the Alumni Association. This prize will not be awarded unless the recipient shall have received at least eighty-five credits out of a possible one hundred in the Practical Examination.

Junior Class.

To the student who shall attain the highest average standing at the periodical and final examinations, *tickets to the Senior Course*, offered by the Trustees.

FEES.

Matriculation, paid but once	$ 2 50
Botany for each term	12 50
Chemistry for each term	12 50
Pharmacy for each term	12 50
Materia Medica for each term	12 50
Fee for Final Examination, payable but once, and not refunded in case of failure	10 00
Certificate of Proficiency	2 00
Latin (optional) for the term	5 00
Review Class for each branch for the term	1 50
Laboratory Instruction for Juniors for the term	5 00
Laboratory Instructions for Seniors for the term	10 00

TERMS FOR EXTRA LABORATORY INSTRUCTION.

From 10 o'clock A. M. to 1 o'clock P. M.

5 days each week, per month	$15 00
4 days	12 00
3 days	9 00
2 days	6 00
1 day	3 00

The final examination fee is to be paid when the candidate presents himself to be examined for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

THE MATRICULATION AND LECTURE TICKETS must be taken out by each student in person, and must be indorsed by the several Professors, the former within fifteen, and the latter within thirty days from the beginning of the lecture course.

MEMBERS AND GRADUATES of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the Departments of the University of California, and in the Cooper Medical College, will be admitted to the lectures by matriculating, and paying only for the matriculation ticket, but will not be permitted to present themselves at any of the examinations, or to attend the Review classes, unless they enter as regular students and pay the fees accordingly.

OTHER STUDENTS, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

LABORATORY FOR PHARMACEUTICAL AND ANALYTICAL CHEMISTRY.

Since great importance is attached to the attainment of manipulative skill in many of the pharmaceutical and chemical processes which pharmacists are called upon to perform, the Board of Trustees have determined upon the inauguration of a Laboratory, wherein, under the guidance of a competent Instructor, work of a practical nature is to be taught.


LABORATORY

The Laboratory is located in the College building, occupying the upper floor. It is well arranged for light and ventilation, and is provided with all conveniences necessary for the comforts of the students. Its size is amply sufficient for present requirements.

JUNIOR COURSE.

This course will be conducted upon a basis which will begin with the more elementary operations, involving: Evaporation, Filtration, Crystallization, Sublimation, Oxidation, Reduction, Fusion, Dialysation, the use of Blow-pipe, etc., including an introduction into the general reactions and tests for basylous and acidulous radicals, preparatory to entering upon a more advanced course.

This course requires ten lessons of three hours each, one morning each week from 9 to 12, and is made obligatory to Junior students. Each student is also required to furnish a certain amount of apparatus, a complete list of which is herewith annexed:

3 Small Evaporating Dishes,
2 Porcelain Crucibles,
1 Pint Flask, flat bottom,
¼ lb. Glass Rods,
3 Small Beaker Glasses,
1 two-oz. Glass Funnel,
1 one-oz. Glass Funnel,
1 ½-oz. Glass Funnel,
1 doz. Test Tubes and Stand,
1 Blowpipe,
Platinum Wire and Foil,
3 Small Flasks,
¼ lb. Glass Tubing,
1 Wire Triangle,
1 Piece Blue Glass,
1 Pair Small Forceps,
1 Pair Scissors,
1 Spatula, 3-inch,
1 Foot Gum Tubing,
6 Sheets Filtering Paper,
1 Test Tube Brush,
1 doz. Corks for Flasks and Test Tubes,
1 Triangular File,
½ oz. Solution of Platinic Chloride,
1 oz. Solution of Silver Nitrate.

Students will be supplied with all re-agents and other apparatus.

TEXT BOOK: Practical and Analytical Chemistry, by Henry Trimble, Ph. G.

TIME TABLE FOR JUNIOR CLASS.

	MON.	TUES.	MON.	TUES.	MON.	TUES.	MON.	TUES.	MON.	TUES.
April	—	—	8	12	15	19	22	26	29	—
May	—	3	6	10	13	17	20	24	27	31
June	3	7	10	14	—	—	—	—	—	—

Terms for the Junior Laboratory Course of ten lessons, five dollars, payable in advance.

SENIOR COURSE.

This course comprises work in qualitative and quantitative chemical analysis; volumetric and gravimetric examination of Chemicals,

detection of organic and inorganic poisons, analysis of potable water and industrial products, urinalysis, etc.

This course requires twenty lessons of three hours each every Wednesday morning from 9 to 12. This course is also made obligatory. Special students in chemistry desiring to obtain Laboratory instruction are permitted to enter on the same terms as regular students; they must matriculate and comply with all requirements demanded.

Re-agents and apparatus not included in the above list, such as Burettes and other graduated instruments, Volumetric Solutions, Platinum ware, etc., are furnished without additional charge, students being required to return the apparatus in good order or pay for all damage.

TIME TABLE FOR SENIOR CLASS.

	WEDNESDAY.	WEDNESD .	WEDNESDAY.	WEDNESDAY.	WEDNESDAY.
April.....	—	10	17	24	—
May.....	1	8	15	22	29
June.....	5	12	19	26	—
July.....	—	10	17	24	31
August..... ...	7	14	21	28	—

TEXT BOOKS AND BOOKS OF REFERENCE: Muter's Analytical Chemistry; Examination of Medicinal Chemicals, by Hoffmann & Power; Dragendorff's Proximate Plant Analysis; Prescott's Proximate Analysis.

Terms for the Senior Laboratory course of twenty lessons, ten dollars, payable in advance.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the lectures, and upon complying with all the requirements for graduation (other than the four years' apprenticeship in the retail drug business) shall receive a Certificate of Proficiency in Chemistry, Materia Medica and Botany, signed by the officers of the College.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates of Pharmacy in this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in

the Medical Department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

MEETINGS OF THE PHARMACEUTICAL SOCIETY.

These are held quarterly in the College building. They are for scientific purposes, and are intended to advance Pharmaceutical knowledge and, at the same time, to encourage and promote a social feeling among the members. All students and graduates are cordially invited to be present.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 to 40 cents. Single furnished rooms may be had, without board, for from $5 to $10 per month.

EMPLOYMENT.

Temporary situations whilst attending College may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influence to find employment for them.

TEXT-BOOKS.

U. S. Pharmacopœia, 1880.
Organic Materia Medica, by J. M. Maisch.
U. S. Dispensatory, by Wood, Remington, and Sadtler.
National Dispensatory, by Stillè and Maisch.
Remington's Practical Pharmacy.
Thome's Botany.
Behr's Flora of the Vicinity of San Francisco.
Richter's Inorganic Chemistry.
Richter's Organic Chemistry.

REFERENCE BOOKS.

Pereira's Materia Medica.
Attfield's Pharmaceutical Chemistry.
Heebner's Manual of Pharmacy.
Fownes' Chemistry.
Roscoe's Elementary Chemistry.
Procter's Lectures on Practical Pharmacy.
Gray's Lessons in Botany.
Gray's How Plants Grow.
Pharmacographia, Flückiger and Hanbury.
Parish's Practical Pharmacy.

SENIORS--CLASS, 1888.

Name.	Nativity.	Preceptor.
Bell, James E. S	Pennsylvania	
Bilger, Frank W	Oregon	Bowman & Son
Blake, Miss Letitia	California	E. Happersberger
Borchers, Adolph W	California	J. J. Mack & Co
Bussenius, Adolph G	California	
Churchill, Jerome P	California	J. Churchill
Delicat, John F. A	California	H. W. Schmidt & Bro
Driscoll, Edward P	California	G. W. Minor
Emmerson, Horatio B	California	John Calvert
Flint, George E	California	G. G. Burnett
Fox, Allie S	California	
Francis, Willard S	California	Langley & Michaels
Frank, Richard T	Nevada	D. M. Gove
Gerdes, Henry G	Germany	H. G. Gerdes
Goodspeed, Miss Stella	Illinois	
Henderson, David L	Ireland	G. G. Burnett
Hesemeyer, Frederick W	Germany	Leipnitz & Co
Higgins, Charles C	California	John J. Cook

Name.	Nativity.	Preceptor.
KEEFE, JOHN	California	J. Calegaris
KELSEY, HARRY D	California	Glines & Dudley
MCCARTY, JAMES H	California	Wells & Son
MCMORRY, P. F	Ireland	S. A. McDonnell
MALONY, JAMES J	California	J. Calegaris
PERKINS, PHILIP J	California	Dr. W. P. McDermott
PETRIE, FRANK B	Indiana	J. C. Sepulveda
RALSTON, FRANK W	California	W. J. Bryan
ROOT, GEORGE A	Massachusetts	E. W. Runyon
ROWE, FREDERICK W	California	E. W. Runyon
SANBORN, WILLIAM K	California	W. K. Sanborn
SMITH, HERBERT R	California	Val. Schmidt & Co
THEVENET, ERNEST J	England	A. Gros
TOPLEY, WILLIAM H	California	James Topley
VON WERTHERN, JOSEPH	Texas	E. L. Battellé
WHITE, THOMAS J	California	C. and C. Hospital
WOLF, EDWARD A	Massachusetts	E. L. Barrington

JUNIORS—CLASS, 1888.

Name.	Nativity.	Preceptor.
AIRALDI, AUGUSTUS	Italy	P. C. Rossi
ARTIGUES, MARIUS A	France	
BAER, FRANK V	New York	F. A. Grazer
BARTHROP, EDWARD B	W. Terrritory	
BAXLEY, GEORGE W.	Virginia	Redington & Co
BECK, HENRY M	Louisiana	J. A. Boyken
BOYLE, JOHN C	California	Langley & Michaels
BURNETT, GEORGE W	California	G. G. Burnett
CALLAGHAN, EMMETT	California	Dr. H. Mervy
CHITWOOD, CHARLES C	Oregon	
COX, LEVITT H	Illinois	H. G. Steinecke
CRACKBON, LOUIS S	California	Le Roy Lee & Co
DAVIS, THOMAS H		H. B. Kilbourn
DEWITT, JOHN W	Missouri	Potrero Pharmacy
DONAHUE, HENRY M	California	Abramson & Bacon
FITZELL, LINCOLN	Iowa	F. A. Weck & Co
FRANCIS, GEORGE H	California	Langley & Michaels
GREEN, JONATHAN	California	A. L. Lengfeld
HARVEY, GEORGE J	Ohio	Langley & Michaels
HORNUNG, GUSTAVE, JR	California	
HOOVER, ULYSSES G	Indiana	Dr. E. L. Mulligan
HUNTINGTON, HEBER L	California	Huntington Bros
JOHNSTON, WALTER S	California	
KELSEY, JOHN E	California	H. H. Skilling
LANN, WILLIAM H	California	R. E. White & Co
L'HOTE, EUGENE	California	A. Zabaldano
LINK, VICTOR W	Mexico	

Name.	Nativity.	Preceptor.
LOVOTI, FREDERICK	S. America	D. P. Rossi
MACFARLANE, WALLACE S	Missouri	E. W. Runyon
MARDIS, BENJAMIN A	California	C. Rothe
MEYERS, FRANK I	California	Langley & Michaels
MICHAELS, CHARLES F	California	Langley & Michaels
O'GORMAN, THEOPHILUS V		
O'GRADY, JAMES J	California	St. Mary's Hospital
O'NEILL, AMBROSE E	California	B. Morgan & Co
RHODIN, VICTOR E	Sweden	F. Sandelin & Co
RYAN, PETER A	New York	Stearns, Worden & Co
SACLIER, LEON	France	
SCHMIDT, EDWARD W	California	W. D. Vinton
SCHNEIDER, HENRY A	California	W. M. Searby
SCHROEDER, THEODORE C	Missouri	Dr. E. F. Leibrich
SHELTON, JAMES R	California	
TREWARTHA, SAMUEL JR		Dr. H. W. Dodge
TORRE, JOHN O	Italy	P. C. Rossi
TUFTS, JOHN B	Massachusetts	C. C. Higgins
WAGENER, ALLEN C	Michigan	Samuel H. Wagener
WALLER, JULIAN L	California	W. J. Bryan
WEIHE, OTTO A	California	Wakelee & Co
WESTLAKE, JOHN L	Canada	Kirkland & Trowbridge
WHITE, GEORGE H	New York	E. Happersberger
WILLIAMS, LAURENCE E	California	George B. Flint

GRADUATING CLASS—1888.

Name of Student.	Subject of Thesis.
ADOLPH G. BUSSENIUS,	Emplastrum Plumbi
JOHN F. A. DELICAT,	Assay of Creasote and two Fluid Extracts
EDWARD P. DRISCOLL,	Eupatorium Perfoliatum
HORATIO B. EMERSON,	Aspidiums of California
GEORGE E. FLINT,	Estimation of Phenol in Disinfectants
DAVID L. HENDERSON,	Preparations of Pepsin
CHARLES C. HIGGINS,	Impurities in Officinal Salts of Iron
HARRY D. KELSEY	Commercial Vinegar
JAMES H. MCCARTHY,	Manufacture and Impurities of Sulphuric Acid
JAMES J. MOLONY,	Fabiana Imbricata
FRANK B. PETRIE,	Bicarbonate of Soda
PHILIP J. PERKINS	Morphine Strength of Tincture of Opium
FRANK W. RALSTON,	Estimation of Cantharidin in Powdered Cantharides
GEORGE A. ROOT,	Estimation of Caffeine in Guarana and its Preparations
WILLIAM K. SANBORN,	Peucedanum Leiocarpum
ERNEST J. THEVENET,	Eugenia Jambolana
WILLIAM H. TOPLEY,	Volumetric Assay of Aqua Chlori
THOMAS J. WHITE,	Franciscea Uniflora

For the year 1888 the following named gentlemen received prizes:

WILLIAM K. SANBORN,

The first prize of a Gold Medal.

Alumni prize, Allen's Commercial Organic Analysis, 3 vols.

HORATIO B. EMERSON,

The second prize, Webster's Unabridged Dictionary.

GEORGE J. HARVEY,

(Member of the Junior Class.)

Junior prize, Lecture Ticket to Senior Course.

GRADUATES.

Name.	Date of Graduation.	Thesis.
ADAIR, WM. H	1881	Extract of Malt
ARGENTI, J. J. B	1881	The olive and its product
BACON, GASTON E	1875	Analysis of tincture of Opium
BARBAT, JOSEPHINE E	1884	Apium graveolens
BARBAT, J. H	1880	Taraxacum leaves and root
BAUER, FRED. C	1887	Analysis of well water
BALL, HENRY A	1884	Analysis of Wilhoit mineral water
BALL, ROBERT L	1882	Bitter bark from San Salvador
BECKETTS, F. ARTHUR	1883	Hydrobromic acid
BESTHORN, H. E. D	1884	Alpinia officinarum
BURNETT, G. G	1879	Rahmnus, Purshiana
BUSSENIUS, ADOLPH G	1888	Emplastrum plumbi
BARRINGTON, CHAS. L	1882	Vitis vinifera
BOND, FREDERICK T	1886	Analysis of bitartrate of potassium
BOSWELL, FRANK M	1886	Acidum boricum
BODKIN, THOS. P	1887	An examination of the American Zinc salts
BRATTON, FRED. O	1886	Antipyrin
BEAIZLEY, GEORGE T	1885	Abrus precatorius
CHARD, GEO. R	1881	Iodoform
CODY, NELSON A	1881	Croton procumbens
CREW, HENRY W	1887	Thea Sinensis
CURRAGH, JOHN M	1877	Damiana
CALEGARIS, JOSEPH	1882	Punica granatum
DELICAT, JOHN F. A	1888	Assay of creosote and two fluid extracts
DEVINE, JOHN	1877	Seidlitz powders
DEWITT, JAMES M	1881	Pharmaceutical ethics
DICK, WILLIAM H	1884	Chamæcyparis lawsoniana
DIGNAN, MICHAEL H	1883	Analysis of a sulphuretted mineral water
DRISCOLL, EDWARD P	1888	Eupatorium perfoliatum
DRISCOLL, FREDERICK A.	1887	An examination of commercial Rochelle salt
DROSSEL, AUGUST A	1886	Chlorophyll
DUBOIS, PAUL A	1880	Grindelia robusta

Name.	Date of Graduation.	Thesis.
D'Artenay, Eugene	1882	Berberis Aquifolium
Davis, Wm. J	1885	Artemisia abrotanum
Dorrance, Ralph G	1885	Rhamnus Purshiana
Elwert, Charles P	1881	Gelsemium sempervirens
Emerson, Horatio B	1888	Aspidiums of California
Fevrier, J. P	1881	Jaborandi
Fitzell, Charles R	1883	Humulus lupulus
Fletcher, David M	1881	Assays of Cinchona bark
Flint, George E	1888	Estimation of Phenol in disinfectants
Gates, Emery P	1887	Peucedanum dasycarpum
Gove, D. M	1881	A well arranged pharmacy
Graham, Thomas D	1875	Oxytropis campestris
Grazer, F. A	1880	Berberis aquifolium
Green, Franklin T	1882	Analysis of well water
Green, John A	1883	Melaleuca hypericifolium
Haman, Henry	1887	Hoang Nan
Hammit, Chas. H	1881	Analysis of Piedmont Spring water
Harris, Henry R	1876	Hydrocyanic acid
Helke, W. S	1878	Erythroxylon coca
Heaney, J. P	1874	Oreodaphne Californica
Henderson, David L	1888	Preparations of Pepsin
Higgins, Chas. C	1888	Impurities in officinal salts of Iron
Hughes, Samuel F	1886	Solanum umbelliferum
Hughes, Thomas H	1886	Prunus ilicifolia
Hulting, B. F	1880	Arctostaphylos glauca
Hurtzig, W. F. N	1881	Chloroform
Happersberger, Emil	1882	Cinchona culture in California
Harmann, Paul T	1885	Assay of citrate of iron and quinia
Ing, John C., Jr	1887	Galipea cusparia
†Jones, Morgan L	1883	Agave Americana
Joy, Edwin W	1878	Fluid extracts by repercolation
Judson, Russell H	1882	Carica papaimya
Kahn, Adolph J	1875	Pharmaceutical education
Kelsey, Harry D	1888	Commercial Vinegar
Korper, Harry W	1883	Boldoa fragrans
Krause, Frederick L	1884	Aqua Menthæ piperitæ
Leber, Albert L	1884	Euphorbia ocellata
Lengfeld, Felix	1880	Assays of Opium
Leszynsky, Samuel	1880	Peptone
Levison, Charles G	1884	Euphorbia pilulifera
Lindsay, Frederick G	1883	Schinos molle
Logan, Milburn H., M.D.	1887	The quality of commercial cream of tartar
Loehr, George W	1884	Qualitative and quantitative tests of drugs
Lustig, Daniel David	1881	Heteromeles arbutifolia
Mathewson, J. McL	1879	Mitchella repens
McCarthy, James H	1888	Manufacture and impurities of Sulphuric acid

†Deceased.

Name.	Graduation. Date of	Thesis.
McDONNELL, S. A.	1878	Dialysed Iron
*McLEAN, F. P.	1875	Analysis of Magnesites
McLAUGHLIN, W H.	1878	Eriodictyon glutinosum
McMURDO, JOHN R.	1887	Volumetic assay of commercial Acetic acid
MERVY, EMILE C.	1879	Lupinus chamissonis
MESSING, L. J.	1879	Eucalyptus globulus
MEYERS, ROBT. C.	1875	Sesame oil and its uses
MINOR, GEO. W.	1879	Larrea Mexicana
MOHUN, CHARLES C.	1887	Albuminate of iron
MOLONY, EDWARD J.	1886	Ferri oxidum sacchartum solubile
MOLONY, JAMES J.	1888	Fabiana imbricata
MORRISON, W P.	1880	Table of solubilities
MOORE, BERKELEY W.	1883	Pyrethrum cinerariæfolium
MOORE, C. C.	1878	Analysis of soil
MORGAN, CHARES L.	1886	Tincture of Nux vomica
MUNSON, JAMES G.	1884	Volumetric tests of arsenical preparations
*MURPHY, MARTIN J.	1881	Amygdalus communis
MEYER, AUGUST W.	1885	Spacele calcina
MAYER, OSCAR J.	1885	Dirca occidentalis
NEWBY, THOMAS S.	1884	Chenopodium Californicum
NICHOLAS, HORACE S.	1887	Cimicifuga racemosa
OBERDEENER, GEO.	1884	Rumex hymenosepalus
OBERDEENER, SAMUEL.	1880	Pharmaceutical notes
ORENA, ARTHUR G.	1887	Caucalis microcarpa
PARKER, E. S.	1878	Aspidium argutum
PATTON, WILLIAM J.	1885	Analysis of Harden & Lewis' fire grenades
PETRIE, FRANK B.	1888	Bi-carbonate of soda
PRIEN, HARRY F.	1885	Oleum Theobromæ
PERKINS, PHILIP J.	1888	Morphine strength of tincture Opium
RAY, FRED E.	1876	California Opium
REILLY, PAUL H.	1883	Tannic acid
RIMPAU, FRANK T.	1883	An assay of ore
ROGERS, NATHAN	1876	Sium latifolium
RALSTON, FRANK W.	1888	Estimation of cantharidine in powdered cantharides.
ROTURIER, EMILE.	1883	Piperidine
REILLY, EUGENE C.	1885	The production of the oil of eucalyptus in California.
ROOT, GEORGE A.	1888	Estimation of caffeine in guarana and its preparations.
SCHOLL, A. L.	1881	Zygadenus fremontii
*SEIFERT, CHARLES A.	1887	Chionanthus Virginica
SELCER, EDWARD	1877	Percolation vs. maceration
SKINNER, ROBERT W.	1883	Semen bardanæ
SMITH, ARTHUR H.	1879	Fucus nodosus
SOMMER, ADOLPH	1879	Calcium cyanide

*Certificate of Prof.

Name.	Date of Graduation.	Thesis.
SANBORN, WILLIAM M.	1888	Peucedanum Leiocarpum
SCHMELZ, CHARLES J.	1885	Audibertia grandiflora
SKILLING, HARRY H.	1885	Eucalyptus globulus
SKINNER, EDWIN E.	1886	Arctostaphylos uva ursi
THEVENET, ERNEST J.	1888	Eugenia jambolaus
TOPLEY, WILLIAM H.	1888	Volumetric assay of aqua chlori
TROPPMANN, CHARLES M.	1881	Rhododendrom occidentale
TRYON, JAMES W.	1882	Mimulus glutinosus
TURNER, GUY S.	1885	Examination of bromide of potassium
TOPLEY, JAMES H.	1885	Volumetric estimation of ammonium, potassium, and sodium hydrates.
†VREELAND, PH. L.	1879	Syrupus ferri iodidi
†YOUNG, WILFRED M.	1882	Megarrhiza Californica
WALL, HENRY A.	1883	Erythroxylon coca
WALSH, ANDREW D.	1884	Malva rotundifolia
WARREN, JOSEPH S.	1887	Liquor ferri chloridi
WEISS, PHILIP.	1878	Leeches
WHITE, THOMAS J.	1888	Franciscea unriflora
WHITNEY, WILLIAM B.	1884	Euphorbia eremocarpus
WIGHT, DAVID.	1882	California drug law
*WULZEN, DIETRICH H. JR.	1887	Cicuta Californica
ZEMANSKY, J. H.	1878	Nicotiana tabacum

*Certificate of proficiency. †Deceased.

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BARBAT, J. H.	113 Fulton Street, San Francisco	1880
BARBAT, JOSEPHINE E.	113 Fulton Street, San Francisco	1884
BECKETT, F. A	55 First Street, San Francisco	1883
BEAIZLEY, G. T.	Powell and Sutter Streets, San Francisco	1885
BESTHORN, H. E. D	65 Minna Street, San Francisco	1884
BODKIN, THOS. P.	Fell and Webster streets, San Francisco	1887
BOSWELL, FRANK M.	Kearny and Clay Streets, San Francisco	1886
BRATTON, FRED. O	Cor. Nineteenth and Valencia Sts., San Francisco	1887
CALEGARIS, J.	S. E. cor. Kearny and Pacific Sts., San Francisco	1882
D'ARTENAY, E.	N. E. cor. Post and Mason Streets, San Francisco	1882
DELICAT, J. F. A.	542 Kearny Street, San Francisco	1888
DEVINE, JOHN	S. E. cor. Kearny and Clay Sts., San Francisco	1877
DICK, W. H.	726 Minna street, San Francisco	1884
DIGNAN, M. H.	Santa Rosa	1883
DROSSEL, AUGUST H.	N. W. nor Powell and Jackson Sts., San Francisco	1886
DUBOIS, P. A.	Cor. Leavenworth and Clay Sts., San Francisco	1880
DAVIS, W. J	318 Montgomery Avenue, San Francisco	1885
ELWERT, C. P.	1400 Post Street, San Francisco	1881
EMERSON, H. B	182 Perry Street, San Francisco	1888
FLETCHER, D. M.	Cor. Geary and Stockton Sts., San Francisco	1881
FEVRIER, J. P.	1124 Stockton Street, San Francisco	1881
GATES, E. P.	New Montgomery and Howard Sts., San Fran	1887
GOVE, D. M.	N.W. cor. California and Fillmore Sts., San Fran	1881
GRAZER, F. A.	Sixth and Harrison Sts., San Francisco	1880
GREEN, F. T.	Fell and Devisadero Sts., San Fraecisco	1882
HAPPERSBERGER, E.	Sixth and Market Sts., San Francisco	1882
HAMAN, HENRY	Sixth and Mission Streets, San Francisco	1887
HUGHES, SAM. F.	Grant Avenue, and Morton Sts., San Francisco	1886
HUGHES, THOS	Third and Market Streets, San Francisco	1886
HULTIEG, B F	Third and Folsom Streets, San Francisco	1880
HURTZIG, W. F. N	140 Third Street, San Francisco	1881
HARRIS, H. R.	S. E. cor. Market and Steuart Sts., San Francisco	1876
*JONES, M. L	Cherokee Flat, California	1883
JOY, EDWIN W.	706 Van Ness Avnue, San Francssco	1878
JUDSON, R. H.	320 Sansome Street, San Francisco	1882
KAHN, A. J	920 Market Street, San Francisco	1875
KELSEY, H. D.	Oakland, California	1888
KORPER, H. W.		1883
KRAUSE, F. L.	517 E. Fourteenth Street, East Oakland, Cal	1884
LEBER, A. L.	Seventh and Market Streets, Oakland, Cal	1884
LESZYNSKY, S. L.	2 Battery Street, San Francisco	1880
LOEHR, G. W.	Geary and Devisadero Streets, San Francisco	1883

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		Class.
LUSTIG, D. D	6 Turk Street, San Francisco	1881
MCCARTHY, J H	437 Larkin Street, San Francisco	1888
MCDONNELL, S. A	Grant Avenue and Morton street, San Francisco	1878
MEYER, AUGUST W	Second and Mission Streets, Srn Francisco	1887
MINOR, G. W	N. E. cor Turk and Taylor Sts., San Francisco	1879
MOHUN, CHARLES C	1825 Eddy Street, San Francisco	1887
MOORE, C. C	Stockton, California	1878
MOLONEY, EDWARD J		1886
MUNSON, J. G	859 Market Street, San Francisco	1884
MAYER, O. T	Cor. Octavia end Geary Streets, San Francisco	1885
NEWBY, T S	San Buenaventura, California	1884
OBERDENEER, S	Santa Clara, California	1880
OBERDENEER, GEO	Stockton, California	1884
PERKINS, P. J	Twenty-fourth and Valencia Streets, San Francisco	1888
PRIEN, H. F	Coronado Beach	1885
RAY, F E	Sacramento, California	1876
REILLEY, P. H	Oakland, California	1883
ROTURIER, E	225 Montgomery Avenue, San Francisco	1883
SANBORN, WILLIAM K.	Benicia, California	1888
SCHMELZ, C. J	400 Hayes Street, San Francisco	1885
SCHOLL, A. L	Cor. Nineteenth and Mission Sts., San Francisco	1881
SEIFERS, CHARLES A	Third and Folsom Streets, San Francisco	1887
SOMMER, AD	Berkeley, California	1879
SKILLING, H. H	Oakland, California	1885
SKINNER, EDWARD E.	Eureka, California	1856
THEVENET, E J	225 Geary Street, San Francisco	1888
TROPPMANN, C M	S. W. cor. Sixth and Folsom Sts., San Francisco	1881
TOPLEY, J. H	Vallejo, California	1885
TURNER, G. S	Modesto, California	1885
WALL, H. A	Vancouver, Washingron Territory	1883
WALSH, A. D	Redwood City, California	1884
WARREN, J. S	1144 McAllister St., San Francisco	1887
WIGHT, D	San Jose, California	1882
WHITE, THOMAS J	Potrero Ave., bet. Twenty-second and Twenty-third	1888
WHITNEY, W. B	Healdsburg, California	1884

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Full name.....

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Where were you born?.....

In what year, and on what date?.....

How long have you been employed in a retail drug store?.....

When were you first so employed?.....

With whom?.....

By what firm are you employed at present?.....

First, Second or Third Course?.....

Where was previous course taken?.....

Was junior examination passed?.....

.....

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Persons applying for matriculation will be requested to answer the above questions.

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The session of 1889 begins February 4th and ends October 31st.

REQUIREMENTS FOR ADMISSION.

Every candidate for admission must be eighteen years of age, must present to the Faculty satisfactory evidence of a good moral character, and must be examined as to his previous education and fitness to appreciate the technical study of Dentistry. The examinations will be chiefly in writing, and will embrace the following subjects, viz: Arithmetic, Geography, English Grammar and Composition, United States History, Natural Philosophy and Chemistry.

JUNIOR EXAMINATIONS.

At the end of the Junior year students will be examined in Anatomy, Physiology, Chemistry Histology, and Mechanical Dentistry, and those who are qualified will receive certificates of admission to the Senior Class.

REQUIREMENTS FOR GRADUATION.

The candidate for the degree of Doctor of Dental Surgery must have attained the age of twenty-one years, and be of good moral character.

He shall have passed a satisfactory examination, both oral and written.

He shall have studied Dentistry *three* years, including the time spent in attending lectures.

He shall have attended two full courses in the Dental Department of the University of California, or one year in some other reputable Dental College, and the second or last in this College.

Graduates in medicine may apply for the Degree of Doctor of Dental Surgery, after having had two full years of practical instruction or experience in Dentistry, one year of which, including one course of lectures, must be spent in the Dental Department of the University of California.

After these requirements have been complied with, upon the recommendation of the Faculty and approval of the Board of Regents, the candidate shall receive the Degree of Doctor of Dental Surgery.

FEES.

The Matriculation Fee will be (paid once)	$ 5 00
Tuition, first year	120 00
Tuition, second year	120 00
Tuition, third year	Free
Fee of Demonstrator of Anatomy, each year	10 00
Diploma Fee	30 00

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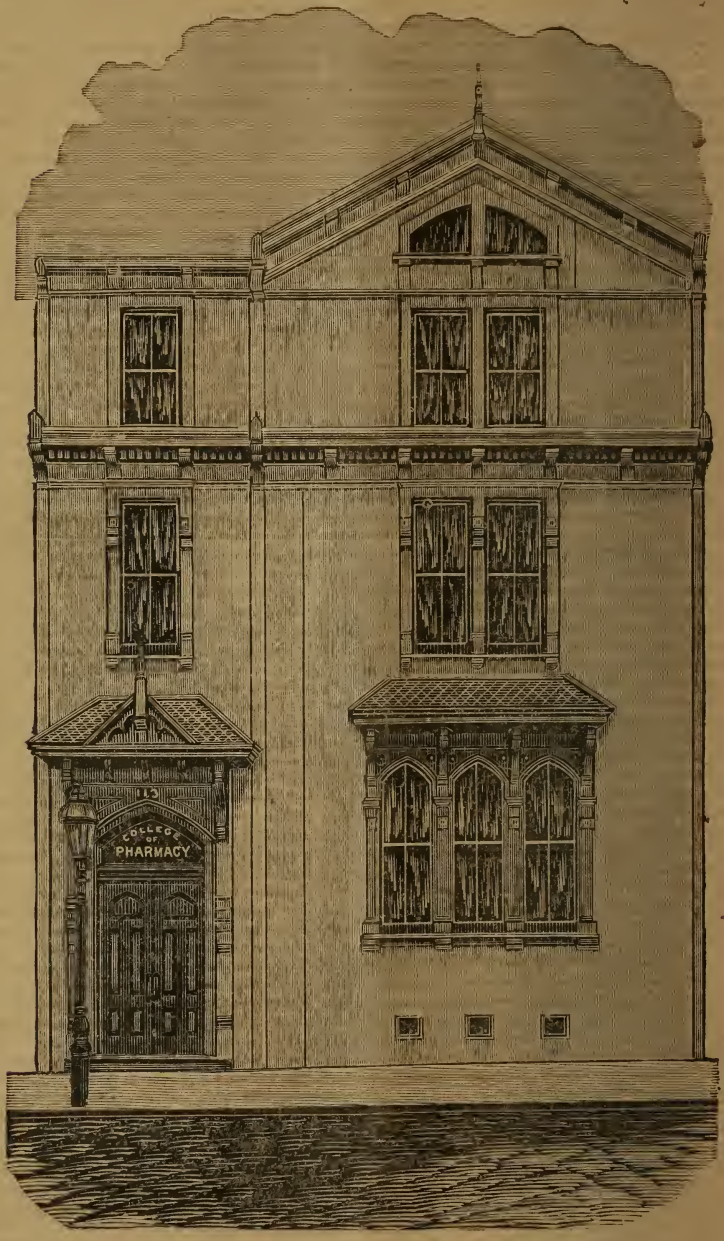
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OF THE

EIGHTEENTH ANNUAL SESSION

OF THE

CALIFORNIA COLLEGE OF PHARMACY

113 Fulton Street, San Francisco, Cal.

DEPARTMENT OF PHARMACY,

UNIVERSITY OF CALIFORNIA.

SESSION OF 1890. Commencing Monday, April 7th.

Alumni of this College and others who wish to receive the Announcement are requested to forward their Names and Addresses to the Dean.

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(Department of Pharmacy, University of California.)

The College building is located at 113 Fulton Street, near the New City Hall.

Correspondence to be addressed to

EDWARD W. RUNYON, Dean,
53 Stevenson Street,
San Francisco, Cal.

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No. 859 Market Street.

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INSTRUCTOR IN LATIN.

W. C. GREGORY, A.B.

PREFATORY.

The Trustees of the California College of Pharmacy take pleasure in presenting to the pharmacists and druggists of the Pacific Coast the annual announcement for the Eighteenth Course of Lectures.

Advances in the Course of Instruction.—The Trustees point with pleasure to the important advances made in the course of instruction. The increased number of lectures and the Laboratory Course instituted last year, proved advantageous to the students. The Laboratory is now fully equipped, and will be used by the Senior Class in doing the work which is to take the place of that heretofore done under less favorable circumstances in preparing their Theses.

Preliminary Education.—The advantage of a Preliminary Examination is now fully recognized as a step in the right direction. The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one who has any prospect of becoming a moderately proficient student. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have a sufficient common school education to enable them to take up with profit the more advanced studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to obtain the proper education, employers should insist upon their making up the deficiency in this respect without delay. Since young men are recommended not to enter the College until they are eighteen years of age, those who intend to make pharmacy their vocation should use their spare time before they reach that age in obtaining, at least, a good common school education. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. Students should also master the rudiments of Latin, but the Trustees do not insist upon their passing an examination *in Latin* previous to entering the College. In the meantime an Instructor in Latin

has been appointed, for the benefit of those who postpone this examination until the close of the term. This position is very ably filled by Mr. W. C. Gregory, whose experience as a teacher, and whose acquaintance with pharmaceutical Latin, give him exceptional fitness for the office. Young men in drug stores, whether students of the College or not, are advised to join this class, if they have not already acquired the requisite knowledge of Latin. Pharmacists in this city will do well to direct the attention of their employés to this opportunity.

Previous Experience in Drug Stores.—Applications are frequently made by persons who wish to enter the College before they have had any experience in pharmacy. In all such cases the Trustees advise the applicants to find employment in a drug store for at least a year before attending lectures. The practical knowledge thus gained enables students to understand the lectures better, and therefore to make more satisfactory progress.

Junior and Senior Classes.—The complete division of the students into two classes—Junior and Senior—which has been in operation the past seven years, has proved very beneficial, though adding greatly to the labors of the Faculty. The Trustees believe that the more fully they can carry out a graded system of instruction, the better it will be for the students. The Modified Examinations now provided for will enable some who may be willing to take three or four years to complete their college course to divide the studies as may best suit their circumstances.

Periodical Examinations.—A system of periodical examinations was inaugurated six years ago, with great advantage. These examinations will be held bi-monthly during the lecture season, and the Faculty will be assisted in conducting them by four committees of the Board of Trustees—one for each chair. This plan is adopted with the hope that it will stimulate earnest, continuous study from the very opening of the term to its close.

Thesis.—It has been decided that Senior students will not be required to present a Thesis as one of the conditions of graduation, but in its place an account of original work done in the laboratory, such as an analysis of a drug, or a pharmaceutical or chemical preparation made by the candidate under the supervision of the Director of the Laboratory.

Assistants to the Professors.—On the recommendation of the Alumni Association of this College, the Trustees have directed the appointment of an assistant for each chair, to assist the students in reviewing the lectures of the several Professors. Such reviews,

when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment as well as to the profit of associated study.

Time of Year of Lecture Course.—Contrary to the custom in eastern and western Colleges of Pharmacy, the lectures of this College are delivered in the summer months. This enables the Professor of Botany to give his instructions by demonstration in Field Botany at the same time that the other lectures are given. It is the season when business in this city is lightest, thus rendering it more easy for clerks to find time to attend lectures and to study at home.

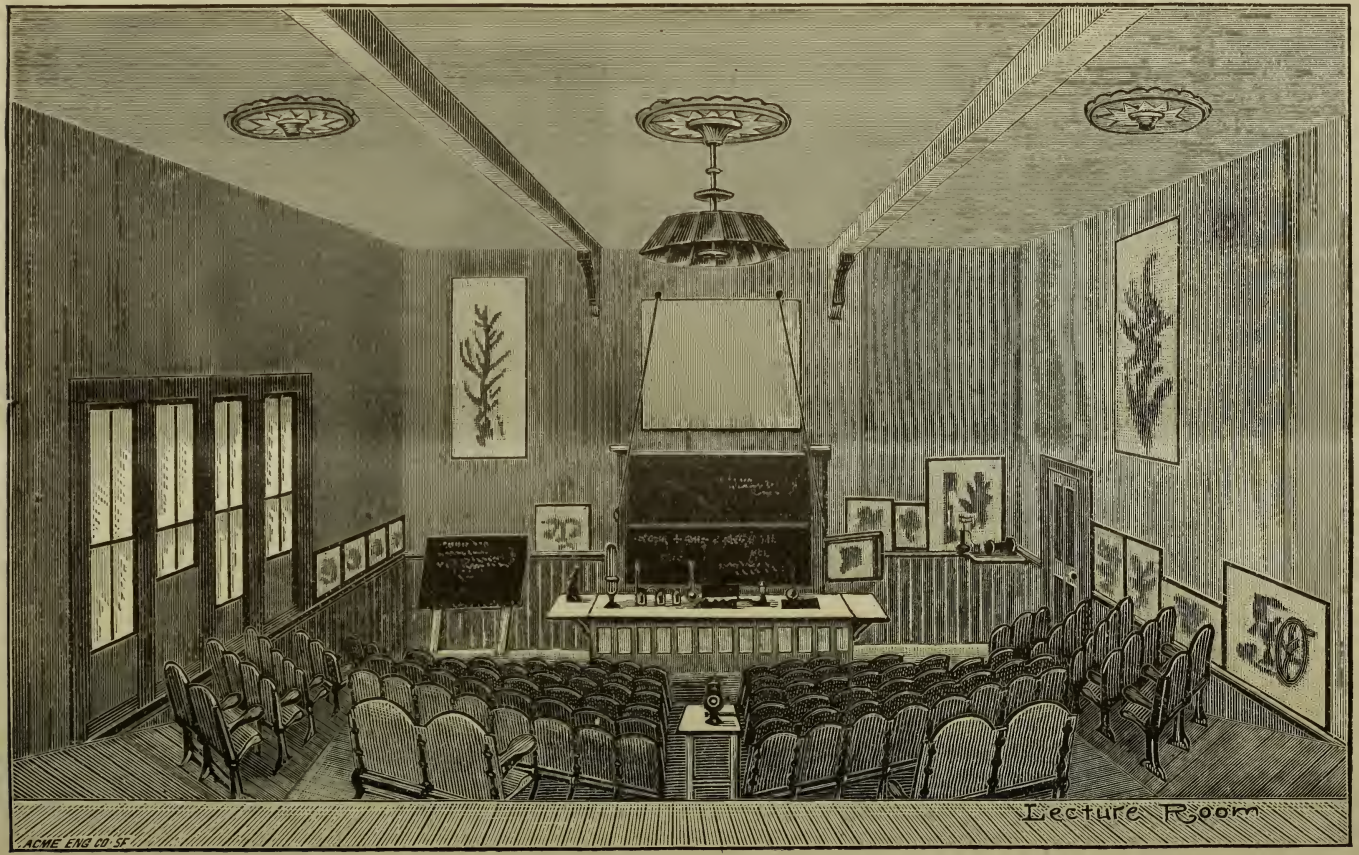
Microscopy.—The Trustees have pleasure in announcing that a prominent member of the San Francisco Microscopical Society will deliver a short series of lectures on the microscope to the students during the term. As the microscope is now recognized as a most efficient aid to the pharmacist, students will appreciate the opportunity here presented.

San Francisco as an Educational Center.—San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries, and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and there is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical, and physiological chemistry.

Description of the College Building.—The new College building is a matter of pride and satisfaction to all who are interested in pharmaceutical education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is centrally located, being on Fulton street, west of Polk, near the New City Hall, and is easily reached by several lines of cable and horse cars. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has

one room for Museum and Library, and another for the Professors; behind these is a Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory, of the same size. On the same floor are two rooms, used by the students in their various classes; also, for meetings of committees, and for other purposes. The third story consists of a small dwelling of five rooms, where the Curator resides. Several additions were made during the past year, including valuable *materia medica* specimens. Among the recent acquisitions are an oxyhydrogen lantern, some new apparatus for illustrations in Physics and Chemistry, Baush and Lomb's Laboratory Microtome, a complete set of Lachman's Photographs of living medicinal plants, and a number of charts for use in the different departments.


Lecture Room
ACME ENG CO SF

ANNOUNCEMENT

OF THE

SESSION OF 1890.

PRELIMINARY EXAMINATION—MATRICULATION.

Every applicant for admission to the regular course for graduation at this College will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography, and arithmetic.

Candidates will therefore be at the College on

FRIDAY, APRIL 4TH, AT 9 A. M.,

For the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above mentioned branches.

PERIODICAL EXAMINATIONS DURING THE SESSION.

The system of written examinations at stated intervals adopted by this College has been highly beneficial. These examinations will take place bi-monthly, in each of the subjects lectured upon by the several Professors, and quarterly in the reading and translating of Latin prescriptions.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees; and the average rating of students, as shown by the results thus obtained, will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

THE LECTURES

Will be delivered in the halls of the College of Pharmacy, 113 Fulton Street, between Polk and Van Ness Avenue, on Monday, Wednesday, Thursday, and Friday evenings, with daylight demonstrations in Botany and Materia Medica on Thursdays, from 11:30 A. M. to 2 P. M.; commencing Monday, April first, and terminating about the end of September. In order that students may derive the fullest benefits from the lectures, they should be present at the opening of the session.

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M.D., PH.G., PH.M.

Junior Course.

The lectures to the Junior Class will be delivered on Mondays and Wednesdays, from 7 to 8 o'clock P. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, the electro-chemical theory, the equivalents of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmaceutical student.

Senior Course.

The lectures to the Senior Class will be delivered on Fridays, from 7 to 8 o'clock P. M.

In the Senior Course the student will be instructed in the more advanced departments of chemical philosophy, molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives: alcohols, ethers, acids, glucosides, alkaloids, etc., will receive their due share of attention.

MATERIA MEDICA.

PROFESSOR WILLIAM M. SEARBY, M.P.S.

Junior Course.

The lectures will be delivered to the Junior Class every Wednesday, from 8 to 9 o'clock P. M., and will begin by referring to drugs derived from the vegetable kingdom. These will be taken up according to the natural orders under which the plants are classed from which they are obtained. The distinguishing characters of each of the natural orders will be considered, and a complete description of the parts of the plants used and officially recognized will be given; and also their physical properties, uses, and doses.

Their commercial source, period of collection, their selection as to quality, and the manner of preserving, will be referred to. The latter part of the term will be devoted to the study of the drugs of animal origin officinally recognized. They will be fully considered as to their source, description, mode of collection, constituents, medical properties, doses, and preparations.

Senior Course.

The lectures for the Senior Class will be delivered every Wednesday, from 9 to 10 P. M., and Thursday, from 12:30 to 1:30 P. M., and full description of the officinal drugs derived from the vegetable kingdom will be given. These will receive particular attention in regard to their general and histological structure, chemical constituents, uses, and doses.

Following a pharmacognostical arrangement, the drugs are studied *comparatively*, points of resemblance and difference being shown, thus training the student in the observation of those characteristics by which the identity of each article may be established, its quality approximately judged, and substitutions and adulterations detected.

The details of pharmaceutical manipulations being dependent upon a knowledge of the chemical composition of the various drugs operated upon, a large portion of these lectures is devoted to this part of the subject.

Microscopic structures will be illustrated by means of diagrams and drawings, and the use of the oxyhydrogen lantern.

BOTANY.

PROFESSOR HERMANN H. BEHR, M.D.

The lectures will be delivered on Thursday of each week, to the Junior Class from 12:30 to 1:30 P. M., and to the Senior Class from 11:30 A. M. to 12:30 P. M. The lectures will include elementary, structural, and systematic botany, and the geography of plants. In addition to these weekly lectures, excursions into the country will be made every fortnight during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor.

For those students having especial interest for botany, lectures and excursions will begin on February twenty-eighth, as much of the flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

THEORY AND PRACTICE OF PHARMACY.

PROFESSOR EDWARD W. RUNYON, PH.G.

Junior Course.

Lectures to the Junior Class on Mondays, from 8 to 9 P. M.

The Junior Course of pharmacy lectures will commence by a definition of pharmacy and of pharmaceutical terms, and a review of the history of the United States Pharmacopœia, as well as a consideration of text-books and works of reference that are of interest and service to the pharmacist.

The various systems and appliances of weights and measures used in the United States, Great Britain, France, and Germany—also Specific Gravity and the means and apparatus necessary for its determination—will be illustrated by experiments, thereby giving the student a clear demonstration of its usefulness as applied to the testing and identifying of many officinal articles.

Next will follow several lectures on pharmaceutical questions, such as the sources and management of heat, its application to the processes of evaporation, simple, fractional, and destructive distillation, sublimation, calcination, etc.; the different degrees of comminution of drugs, and how they are effected; the principles of solution, filtration, clarification, and decoloration, neutralization, crystallization, precipitation, and dialysis. Following this,

the important subjects of digestion, infusion, maceration, percolation, and re-percolation, will be fully considered and practically illustrated before the class. This course will close with a few lectures upon extemporaneous pharmacy, reading of prescriptions, and all the requirements and conveniences of the dispensing counter.

Senior Course.

Mondays, from 9 to 10 P. M., and Fridays, from 8 to 9 P. M.

The Senior Course of pharmacy lectures will treat directly and systematically of the prescriptions of the Pharmacopœia, introducing, from time to time, those principles taught in the Junior Course, and necessary in order to carefully and properly prepare medicines. The preparations of the Pharmacopœia, their source, manufacture, and employment, the adulterations and sophistications to which they are subject, and the methods for their detection, will be noticed to the extent their importance may demand. Charts, tables, and all the necessary apparatus for illustration will be brought into use, and every effort made to familiarize the student with the subject under consideration. One or two lectures will be given upon the important subjects of toxicology and examination of urine; also upon the testing of pharmacopœial preparations by means of reagents and volumetric solutions.

The lecturer has made arrangements with several manufacturing establishments of San Francisco and vicinity, such as the acid and chemical works, alcohol distilleries, glass works, sugar refineries, drug mills, etc., to accompany the Senior Class of students where they may be able to observe, on a large scale, many of the operations alluded to in the lectures, trusting in this way to familiarize them with matters which are usually imperfectly explained in lectures and text-books.

SCHEDULE OF LECTURES.

MONDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
P. M. 7 to 8—Chemistry. *Juniors.*	P. M. 7 to 8—Chemistry. *Juniors.*	A. M. 11:30 to 12:30—Botany. *Seniors.*	P. M. 7 to 8—Chemistry. *Seniors.*
8 to 9—Pharmacy. *Juniors.*	8 to 9 — Materia Medica. *Juniors.*	P. M. 12:30 to 1:30—Botany. *Juniors.*	8 to 9 — Pharmacy. *Seniors.*
9 to 10—Pharmacy. *Seniors.*	9 to 10 — Materia Medica. *Seniors.*		

ALUMNI REVIEW CLASSES.

Several members of the Alumni Association of the College, to be appointed by the Faculty, will conduct the Class Reviews on Monday, Wednesday, Thursday, and Friday, after the close of the lecture, as follows:

Monday.	Wednesday.	Thursday.	Friday.
P. M. 9 to 10—Chemistry and Materia Medica. (alternating). *Juniors.*	P. M. 9 to 10—Chemistry and Materia Medica. (alternating). *Seniors.*	P. M. 12:30 to 1:30—Pharmacy and Botany. (alternating). *Juniors.*	P. M. 9 to 10 — Pharmacy. *Seniors.*

Attendance upon these reviews is obligatory. They do much to refresh the memory upon the subjects that have been taught, difficulties are discussed and overcome, and an impetus is given to study.

MICROSCOPY.

In recognition of the constantly increasing importance of the microscope as a factor in practical pharmaceutical work, the Trustees take pleasure in announcing that a well known microscopist of this city has kindly consented to deliver, during the ensuing course, a series of five lectures on the microscope, with special reference to its application in pharmacy. Among the subjects treated will be: the manipulation of the microscope, and its principal accessories; the use of mounting appliances, microtomes, etc.; the preparation and mounting of objects; the various mounting media; the determination of magnifying power; the use of the Camera Lucida; photo-micrography; the detection of adulterations, etc. Mounted slides, illustrative of the subjects treated, will be shown under a number of microscopes at the conclusion of each lecture, and the oxyhydrogen microscope will be used during the course. It is confidently expected that this series of lectures will be of the greatest value in directing the attention of students to a field of research in pharmaceutical study, which is not only of great practical value, but of fascinating interest as well.

In order to further stimulate effort in this direction, the Trustees have added to the Reference Library a well selected assortment

of standard microscopical literature, which can, at all times, be consulted by students of the College.

The dates for the delivery of the above mentioned lectures will be announced at the opening of the College.

LATIN.

Many persons having entered upon the profession of Pharmacy with little or no knowledge of Latin, the Trustees have appointed an instructor to teach the rudiments of this language, and such technical use of it as will enable the student to read physicians' prescriptions and Latin pharmacopœias with accuracy. Attendance upon this class is optional. Nevertheless, as the correct reading of prescriptions forms a part of the practical examination for the Degree, it is required that the student should, at some period, obtain a fair knowledge of rudimentary Latin. Those who have been members of this class in previous years derived much benefit from the instruction they received, and the Trustees recommend all whose early advantages in this department have been limited, to make up the deficiency during the College course, if they have not done so before.

EXAMINATIONS.

Preliminary Examination, see page 9.

Periodical Examination during the session, see page 9.

JUNIOR EXAMINATION.

(FOR ADMISSION TO THE SENIOR CLASS.)

Junior students, whose rating in the bi-monthly and final examinations show a satisfactory proficiency and degree of progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Juniors failing to receive a sufficiently high rating to warrant their admission to the Senior Class, will be required to pass an examination at the commencement of the next lecture term in those branches only in which their rating at the previous examinations may have been insufficient. This will not apply to students who do not take the examination at the end of the lecture term. If the results of this examination shall show that

they have, by study, made good their deficiency, they will then be permitted to enter the Senior Class.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, they will be required to pass the *Junior Examination.*

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a MODIFIED JUNIOR EXAMINATION.

A student in the Junior Class may, at the end of this course, select of the parts into which the Junior Examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, "Committee"), any number, not less than two, in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September first. If he pass in all the branches selected by him, the results will be placed to his credit; and at the close of the following term he may present himself for examination in the remaining branches, and if he pass also in these, he will be entitled to join the Senior Class. But no student will be allowed to enter the Senior Class, in any branch, until he shall have passed in all the branches of the Junior Class. If, at the first partial examination, he should fail in any branch selected, he will be reëxamined in this branch also during his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

SENIOR EXAMINATION.

The Senior Class will be examined for the degree of Graduate in Pharmacy, at the end of the session, in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characters of Drugs, their doses and uses; Theoretical and Practical Pharmacy, and the Transla-

tion of Recipes from Latin into English, and from English into Latin. The practical examination will include the actual compounding of Prescriptions, and the manipulation of Drugs and Chemicals in the presence of the Examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least *two full courses* of lectures, may, at the end of the Senior Course, present himself for examination in CHEMISTRY, BOTANY, and MATERIA MEDICA (including the identification of specimens), reserving the remainder of his examination (THEORETICAL and PRACTICAL PHARMACY, and "COMMITTEE") until a subsequent year. He must give notice, in writing, to the Dean, on or before September first, of his intention to so divide his examination. If he pass in any or all of these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term, he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the Degree of Graduate in Pharmacy.

CONDITIONS OF GRADUATION.

Every person upon whom the diploma of Graduate in Pharmacy shall be conferred must be of good moral character, shall have attained the age of twenty-one years, and attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy. He must have had, inclusive of the time of attendance at this College, four years' experience in a pharmacy where prescriptions are compounded, and must have attended the Senior Laboratory Course of this College. No special examination will be held for candidates for the degree, but only an examination at the end of the regular course. Students failing to attend less than two thirds of the lectures in each chair will not be allowed to enter the final examinations.

Each candidate will be required, in addition to attendance in the Laboratory for twenty days, to present to the Board a pharmaceutical or chemical preparation, and also an analysis of a drug, chemical, artificial, or natural product, with descriptions of the

by, and the operations conducted under, the supervision of the Director of the Laboratory.

Each candidate must pay an examination fee of ten dollars, and furnish certificates or other satisfactory evidence as to age and time of service.

Those who fail to appear for examination, or who do not pass satisfactorily, will be allowed to present themselves at any subsequent examination without further charge.

No person will be allowed to present himself for examination for the degree until all his dues to the College are paid.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University of California, by whom the degree is conferred (the College of Pharmacy being affiliated with the University).

Graduates of such medical colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Pharmacy, and Botany will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded. No Certificate of Proficiency in Pharmacy will be issued, unless the student has satisfactorily passed in all the branches. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subject as is required in the general average.

Certificates of Proficiency for successful candidates under twenty-one years, for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica, or Botany, must be paid for at the rate of two dollars each.
methods employed. The subjects for the work shall be proposed

PRIZES.

Four prizes will be awarded at the close of the term, as follows:

Senior Class.

To the student whose examination shall be satisfactory in every department, and who shall attain the highest general average at the periodical and final examinations, *a gold medal*, offered by the Faculty.

To the student whose examination shall be satisfactory in every department, and who shall stand second in the general average at the periodical and final examinations, *a microscope*, offered by the Langley & Michaels Company.

To the student who shall pass the best examination in Practical Pharmacy (including the actual compounding of prescriptions and the identification of specimens of drugs, chemicals, and pharmaceutical preparations), *books or apparatus to the value of twenty dollars*, offered by the Alumni Association. This prize will not be awarded unless the recipient shall have received at least eighty-five credits out of a possible one hundred in the Practical Examination.

Junior Class.

To the student who shall attain the highest average standing at the periodical and final examinations, *tickets to the Senior Course*, offered by the Trustees.

FEES.

For Juniors, total expense (except Latin), $63 50; for Seniors (except certificate or diploma), $66. Segregated as follows:

Matriculation (paid but once)	$2 50
Botany (for each term)	12 50
Chemistry (for each term)	12 50
Pharmacy (for each term)	12 50
Materia Medica (for each term)	12 50
Fee for Final Examination (payable but once, and not refunded in case of failure)	10 00
Certificate of Proficiency	2 00
Latin, optional (for the term)	5 00
Review Class for each branch (for the term)	1 50
Laboratory instruction for Juniors (for the term)	5 00
Laboratory instruction for Seniors (for the term)	10 00

TERMS FOR EXTRA LABORATORY INSTRUCTION.

From 10 o'clock A. M. to 1 o'clock P. M.

5 days each week, per month	$15 00
4 days	12 00
3 days	9 00
2 days	6 00
1 day	3 00

The final examination fee is to be paid when the candidate presents himself to be examined for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

THE MATRICULATION AND LECTURE TICKETS must be taken out by each student in person, and must be indorsed by the several Professors, the former within fifteen and the latter within thirty days from the beginning of the lecture course.

MEMBERS AND GRADUATES of the College, and students who have attended two sessions in the College, are admitted free to the lectures. Students in any of the Departments of the University of California, and in the Cooper Medical College, will be admitted to the lectures by matriculating, and paying only for the matriculation ticket, but will not be permitted to present themselves at any of the examinations, or to attend the Review classes, unless they enter as regular students and pay the fees accordingly.

OTHER STUDENTS, not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

LABORATORY FOR PHARMACEUTICAL AND ANALYTICAL CHEMISTRY.

Since great importance is attached to the attainment of manipulative skill in many of the pharmaceutical and chemical processes which pharmacists are called upon to perform, the Board

LABORATORY

of Trustees last year fitted up and thoroughly furnished a Laboratory, wherein, under the guidance of a competent instructor, work of a practical nature is taught.

The Laboratory is located in the College building, occupying the upper floor. It is well arranged for light and ventilation, and is provided with all conveniences necessary for the comfort of the students.

JUNIOR COURSE.

This course will be conducted upon a basis which will begin with the more elementary operations, involving: Evaporation, Filtration, Crystallization, Sublimation, Oxidation, Reduction, Fusion, Dialysation, the use of Blowpipe, etc., including an introduction into the general reactions and tests for basylous and acidulous radicals, preparatory to entering upon a more advanced course.

This course requires ten lessons of three hours each, one morning each week, from 9 to 12, and is made obligatory to Junior students. Each student is also required to furnish a certain amount of apparatus, a complete list of which is herewith annexed:

Three small evaporating dishes, two, four, and twelve-ounce.
Two porcelain crucibles.
One ten-ounce flask (flat bottom).
One quarter pound glass rods.
Three small beaker glasses.
One four-ounce glass funnel.
One one-ounce glass funnel.
One dozen test tubes and stand.
One sixteeen-ounce gas bottle.
One blowpipe.
Platinum wire and foil.
One quarter pound glass tubing.
One wire triangle.
One piece blue glass.
One pair small forceps.
One pair scissors.
One spatula, three-inch.
One foot gum tubing.
Six sheets filtering paper.
One test tube brush.
One dozen corks for flasks and test tubes.
One triangular file.
One half ounce solution of platinic acid.
One ounce solution of silver nitrate.

Students will be supplied with all reagents and other apparatus.

TEXT-BOOK: Practical and Analytical Chemistry, by Henry Trimble, Ph.G.

TIME TABLE FOR JUNIOR CLASS.

	MON.	TUES.	MON.	TUES.	MON.	TUES.	MON.	TUES.	MON.	TUES.
April	—	—	7	8	14	15	21	22	28	29
May	5	6	12	13	19	20	26	27	—	—
June	2	3	9	10	—	—	—	—	—	—

Terms for the Junior Laboratory Course of ten lessons, five dollars, payable in advance.

SENIOR COURSE.

This course comprises work in qualitative and quantitative chemical analysis, volumetric and gravimetric examination of chemicals, detection of organic and inorganic poisons, analysis of potable water and industrial products, urinalysis, etc.

This course requires twenty lessons of three hours each every Wednesday morning from 9 to 12. This course is also made obligatory. Special students in chemistry desiring to obtain Laboratory instructions are permitted to enter on the same terms as regular students; they must matriculate and comply with all requirements demanded.

Reagents and apparatus not included in the above list, such as burettes and other graduated instruments, volumetric solutions, platinum ware, etc., are furnished without additional charge, students being required to return the apparatus in good order or pay for all damage.

TIME TABLE FOR SENIOR CLASS.

	WEDNESDAY.	WEDNESDAY.	WEDNESDAY.	WEDNESDAY.	WEDNESDAY.
April	—	9	16	23	30
May	—	7	14	21	28
June	4	11	18	25	—
July	2	9	16	23	30
August	6	13	20	—	—

TEXT-BOOKS AND BOOKS OF REFERENCE: Muter's Analytical Chemistry; Examination of Medicinal Chemicals, by Hoffman & Power; Dragendorff's Proximate Plant Analysis; Prescott's Proximate Analysis.

Terms for the Senior Laboratory Course of twenty lessons, ten dollars, payable in advance.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the lectures, and upon complying with all the requirements for graduation (other than the four years' apprenticeship in the retail drug business), shall receive a Certificate of Proficiency in Chemistry, Materia Medica, and Botany, signed by the officers of the College.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in the Medical Department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to Graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

MEETINGS OF THE PHARMACEUTICAL SOCIETY.

These are held quarterly in the College building. They are for scientific purposes, and are intended to advance pharmaceutical knowledge and at the same time to encourage and promote a

social feeling among the members. All students and graduates are cordially invited to be present.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 to 40 cents. Single furnished rooms may be had, without board, for from $5 to $10 per month.

EMPLOYMENT.

Temporary situations whilst attending College may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influence to find employment for them.

TEXT-BOOKS.

U. S. Pharmacopœia, 1880.
Organic Materia Medica, by J. M. Maisch.
U. S. Dispensatory, by Wood, Remington, and Sadtler.
National Dispensatory, by Stillè and Maisch.
Remington's Practical Pharmacy (second edition).
Thome's Botany.
Behr's Flora of the Vicinity of San Francisco.
Attfield's Pharmaceutical Chemistry.

REFERENCE BOOKS.

Pareira's Materia Medicá.
Richter's Organic and Inorganic Chemistry.
Heebner's Manual of Pharmacy.
Fownes' Chemistry.
Roscoe's Elementary Chemistry.
Procter's Lectures on Practical Pharmacy.
Gray's Lessons in Botany.
Gray's How Plants Grow.
Pharmacographia, Flückiger and Hanbury.
Parish's Practical Pharmacy.

SENIORS—CLASS 1889.

Name.	Nativity.	Preceptor.
Beck, Henry M.	Louisiana	J. W. Boyken
Bilger, Frank W.	Oregon	Bowman & Son
Borchers, Adolph W.	California	Mack & Co.
Boyle, John C.	California	Langley & Michaels
Burnett, George W.	California	G. G. Burnett
Collins, Hugh	California	James H. Gates & Son
Cox, Levitt H.	Illinois	Dr. J. G. Day
Davis, Thomas H.	England	H. P. Kilbourn
Fitzell, Lincoln	Iowa	F. A. Weck & Co.
Fox, Albert S.	California	
Gerdes, Henry G.	Germany	H. G. Gerdes
Harvey, George J.	Ohio	Langley & Michaels
Hill, Edmund E.	California	T. L. Sulzberger
Hoover, Ulyssus G.	Indiana	
Hornung, Gustave, Jr.	California	
Kelsey, John E.	California	W. C. Smith
Link, Victor A.	Mexico	
Mardis, Benjamin A.	California	C. L. Barrington
Morgan, Henry F.	Missouri	A. L. Lengfeld
Neilson, Alexander	Scotland	
O'Grady, James J.	California	St. Mary's Hospital
O'Neill, Ambrose E.	California	Eugene d'Artenay
Schneider, Ralston H.	California	Dr. G. H. Akin
Trewartha, Samuel O., Jr.	California	Dr. W. Dodge
Wagener, Allan C.	Michigan	S. H. Wagener
Waller, Julian L.	California	W. J. Bryan
Weihe, Otto A.	California	Wakelee & Co.
Williams, Laurence E.	California	George B. Flint

JUNIORS—CLASS 1889.

Name.	Nativity.	Preceptor.
Airaldi, Augustus	Italy	P. C. Rossi
Aitken, Louis S.	California	S. A. McDonnell
Artigues, Marius D.	France	
Barkley, Samuel D.	California	H. Grimshaw
Bernheim, Moses R.	California	A. L. Lengfeld
Brackett, Eugene	Illinois	
Callender, Ernest G.	Iowa	Weitman & Henry
Calloghan, Emmett S.	California	Dr. H. Mervy
Cleary, Stephen	Ireland	E. Happersberger
Duprey, Alfred I.	Illinois	Langley & Michaels
Gilbride, Philip J.	British Columbia	Miller & Whitney
Hanby, Paul N.	Virginia	John Calvert
Harvey, William A.	Missouri	S. A. McDonnell
Hartmann, Otto A.	California	John W. Salter
Hassler, William C.	Illinois	William F. Freidhofer

Name.	Nativity.	Preceptor.
Hueter, Gustave A., Jr.	California	John H. Dawson
Hunter, Frank A.	California	
Larkin, James T.	California	W. A. Perwo
Legge, Robert T.	California	D. M. Gove
Leithold, John V.	Iowa	
Lhote, Eugene F.	California	A. Zabaldana
Lovatti, Frederico	South America	D. P. Rossi
Medros, Joseph J., Jr.	St. Michaels	H. A. Glines & Co.
Meyer, Frank I.	California	Langley & Michaels
Newman, Felix H.	California	W. H. Cork & Co.
O'Gorman, Theophilus	Ireland	U. S. Marine Hospital
Painter, George L.	Virginia	Kirkland & Trowbridge
Patterson, Frank F.	Massachusetts	H. G. Gerdes
Prosser, Sandford S.	Tennessee	Prosser Brothers
Redmond, John E.	Nevada	Val. Schmidt
Reed, George W.	Utah	
Schmidt, Edward	California	Val. Schmidt
Schroeder, Theodore C.	California	
Shumate, Thomas E.	Missouri	G. L. Loehr & Co.
Ryan, Peter A.	New York	Stearns, Worden & Co.
Smith, Kirby B.	Ohio	Bart Morgan & Co.
Squires, Harry J.	England	William Rutledge
Statia, Harry V.	California	E. W. Runyon
Trask, Henry C.	Missouri	H. F. Wynne
Ware, John H.	Colorado	James H. Gates & Son
Warren, George R.	Ohio	
Wise, Matthew S.	California	Dr. Pring
Wood, Frederick W.	Honolulu	Searby, Zeilin & Co.

GRADUATING CLASS—1889.

Name.	Thesis.
Beck, Henry M.	Tasteless Fl. Ext. Cascara Sagrada
Bilger, Frank W.	Eucalyptus
Borchers, Adolph W.	Ung. Hydrarg. Nit.
Bowen, Charles P.	Cera alba and flava
Cox, Levitt H.	Gonania dominguensis
Fitzell, Lincoln	Yerba buena
Fox, Albert S.	Peppermint and its oil
Gerdes, Henry G.	Eschscholtzia Californica
Hall, Benj. F.	Sp. Ætheris Nit.
Heider, Frank B.	Syr. Ferri Iodidi
Harvey, Geo. J.	Sp. Ætheris Nit.
Morgan, Henry F.	Glycerine Suppositories
O'Neill, Ambrose E.	Ipecac and its Fl. Ext.
Van Worthern, Joseph	Arbutus Menziesii
Weihe, Otto A.	Salix nigra
Wagener, Allen C.	Linum
Williams, Laurence E.	Noregamia alata
Waller, Julian L.	Estimation of Caffeine

For the year 1889 the following named gentlemen received prizes:

George J. Harvey,

The first prize of a Gold Medal.

Alumni prize, Allen's Commercial Organic Analysis, three volumes.

Ambrose E. O'Neill,

The second prize, Webster's Unabridged Dictionary.

George W. Reed,

(Member of the Junior Class),

Junior prize, Lecture Tickets to Senior Course.

GRADUATES.

Name.	Date of Graduation.	Thesis.
Adair, Wm. H.	1881	Extract of malt
Argenti, J. J. B.	1881	The olive and its product
Bacon, Gaston E.	1875	Analysis of tincture of opium
Barbat, Josephine E.	1884	Apium graveolens
Barbat, J. H.	1880	Taraxacum leaves and root
Bauer, Fred. C.	1877	Analysis of well water
Ball, Henry A.	1884	Analysis of Wilhoit mineral water
Ball, Robert L.	1882	Bitter bark from San Salvador
Beck, Henry M.	1889	Tasteless Fl. Ext. Cascara Sagrada
Beckett, F. Arthur	1883	Hydrobromic acid
Besthorn, H. E. D.	1884	Alpinia officinarum
Bilger, Frank W.	1889	Eucalyptus
Burnett, G. G.	1879	Rhamnus Purshiana
Bussenius, Adolph G.	1888	Emplastrum plumbi
Barrington, Chas. L.	1882	Vitis vinifera
Bond, Frederick T.	1886	Analysis of bitartrate of potassium
*Borchers, Adolph W.	1889	Ung. Hyd. Nit.
Boswell, Frank M.	1886	Acidum boricum
Bodkin, Thomas P.	1887	An examination of the American zinc salts
Bowen, Chas. P.	1889	Cera alba and cera flava
Bratton, Fred. O.	1886	Antipyrin
Beaizley, George T.	1885	Abrus precatorius
Chard, George R.	1881	Iodoform
Cody, Nelson A.	1881	Croton procumbens
*Cox, Levitt H.	1889	Gohania doming
Crew, Henry W.	1887	Thea sinensis
Curragh, John M.	1877	Damiana
Calegaris, Joseph	1882	Punica granatum
Delicat, John F. A.	1888	Assay of creosote and two fluid extracts
Devine, John	1877	Analysis of seidlitz powders
DeWitt, James M.	1881	Pharmaceutical ethics
Dick, William H.	1884	Chamæcyparis lawsoniana
Dignan, Michael H.	1883	Analysis of a sulphuretted mineral water
Driscoll, Edward P.	1888	Eupatorium perfoliatum
Driscoll, Frederick A.	1887	An examination of commercial Rochelle salt
Drossel, August A.	1886	Chlorophyll
Dubois, Paul A.	1880	Grindelia robusta

* Certificate.

Name.	Date of Graduation.	Thesis.
D'Artenay, Eugene	1882	Berberis Aquifolium
Davis, Wm. J.	1885	Artemisia abrotanum
Dorrance, Ralph G.	1885	Rhamnus Purshiana
Elwert, Charles P.	1881	Gelsemium sempervirens
Emerson, Horatio B.	1888	Aspidiums of California
Fevrier, J. P.	1881	Jaborandi
Fitzell, Charles R.	1883	Humulus lupulus
*Fitzell, Lincoln	1889	Yerba buena
Fletcher, David M.	1881	Assays of Cinchona bark
Flint, George E.	1888	Estimation of Phenol in disinfectants
Fox, Albert S.	1889	Peppermint and its oil
Gates, Emery P.	1887	Peucedanum dasycarpum
Gerdes, Henry G.	1889	Echscholtzia Californica
Gove, D. M.	1881	A well arranged pharmacy
Graham, Thomas D.	1875	Oxytropis campestris
Grazer, F. A.	1880	Berberis aquifolium
Green, Franklin T.	1882	Analysis of well water
Green, John A.	1883	Melaleuca hypericifolium
Hall, Benj. F.	1889	Sp. æther. nit.
Haman, Henry	1887	Hoang Nan
Hammit, Charles H.	1881	Analysis of Piedmont Spring water
Harris, Henry R.	1876	Hydrocyanic acid
Harvey, George J.	1889	Sp. æther. nit.
Heider, Frank B.	1889	Syr. Ferri Iodidi
Helke, W. S.	1878	Erythroxylon coca
Heaney J. P.	1874	Oreodaphne Californica
Henderson, David L.	1888	Preparations of Pepsin
Higgins, Chas. C.	1888	Impurities in officinal salts of Iron
Hughes, Samuel F.	1886	Solanum unbelliferum
Hughes, Thomas H.	1886	Prunus ilicifolia
Hulting, B. F.	1880	Arctostaphylos glauca
Hurtzig, W. F. N.	1881	Chloroform
Happersberger, Emil	1882	Cinchona culture in California
Harman, Paul T.	1885	Assay of citrate of iron and quinia
Ing, John C., Jr.	1887	Gilipea cusparia
†Jones, Morgan L.	1883	Agave Americana
Joy, Edwin W.	1878	Fluid extracts by repercolation
Judson, Russell H.	1882	Carica papaya
Kahn, Adolph J.	1875	Pharmaceutical education
Kelsey, Harry D.	1888	Commercial vinegar
Korper, Harry W.	1883	Boldoa fragrans
Krause, Frederick L.	1884	Aqua Menthæ piperitæ
Leber, Albert L.	1884	Euphorbia ocellata
Lengfeld, Felix	1880	Assays of opium
Lezynsky, Samuel	1880	Peptone
Levison, Charles G.	1884	Euphorbia pilulifera
Lindsay, Frederick G.	1883	Schinos molle
Logan, Milburn H., M.D.	1887	The quality of commercial cream of tartar
Loehr, George W.	1884	Qualitative and quantitative tests of drugs
Lustig, Daniel David	1881	Heteromeles arbutifolia
Mathewson, J. McL.	1879	Mitchella repens

* Certificate. † Deceased.

Name.	Date of Graduation.	Thesis.
McCarthy, James H.	1888	Manufacture and impurities of sulphuric acid
McDonnell, S. A.	1878	Dialysed iron
McLean, F. P.	1875	Analysis of magnesites
McLaughlin, W. H.	1878	Eriodictyon glutinosum
McMurdo, John R.	1887	Volumetric assay of commercial acetic acid
Mervy, Emil C.	1879	Lupinus chamissonis
Messing, L. J.	1879	Eucalyptus globulus
Meyers, Robert C.	1875	Sesame oil and its uses
Minor, George W.	1879	Larrea Mexicana
Mohun, Charles C.	1887	Albuminate of iron
Molony, Edward J.	1886	Ferri oxidum sacchartum solubile
Malony, James J.	1888	Fabriana imbricata
Morgan, Henry F.	1889	Glycerine suppositories
Morrison, W. P.	1880	Table of solubilities
Moore, Berkeley W.	1883	Pyrethrum cineraixfolium
Moore, C. C.	1878	Analysis of soil
Morgan, Charles L.	1886	Tincture of nux vomica
Munson, James G.	1884	Volumetric tests of arsenical preparations
*Murphy, Martin J.	1881	Amygdalus communis
Meyer, August W.	1885	Spacele calcina
Mayer, Oscar J.	1885	Dirca occidentalis
Newby, Thomas S.	1884	Chenopodium Californicum
Nicholas, Horace S.	1887	Cimicifuga racemosa
Oberdeener, George	1884	Rumex hymenosepalus
Oberdeener, Samuel	1880	Pharmaceutical notes
O'Neill, Ambrose E.	1889	Ipecac and its fluid extract
Orena, Arthur G.	1887	Caucalis microcarpa
Parker, E. S.	1878	Aspidium argutum
Patton, William J.	1885	Analysis of Harden & Lewis' fire grenades
Petrie, Frank B.	1888	Bicarbonate of soda
Prien, Harry F.	1885	Oleum theobromæ
Perkins, Philip J.	1888	Morphine strength of tincture opium
Ray, Fred. E.	1876	California opium
Reilly, Eugene C.	1885	The production of the oil of eucalyptus in California
Reilly, Paul H.	1883	Tannic acid
Rimpau, Frank T.	1883	An assay of ore
Rogers, Nathan	1876	Sium latifolium
Ralston, Frank W.	1888	Estimation of cantharidine in powdered cantharides
Roturier, Emile	1883	Piperidine
Root, George A.	1888	Estimation of caffeine in guarana and its preparations
Scholl, A. L.	1881	Zygadenus fremontii
Seifert, Charles A.	1887	Chionanthus Virginica
Selzer, Edward	1877	Percolation vs. maceration
Skinner, Robert W.	1883	Semen bardanæ
Smith, Arthur H.	1879	Fucus nodosus
Sommer, Adolph	1879	Calcium cyanide
Sanborn, William M.	1888	Peucedanum Leiocarpum
Schmelz, Charles J.	1885	Audibertia grandiflora

*Deceased.

Name.	Date of Graduation.	Thesis.
Skilling, Harry H.	1885	Eucalyptus globulus
Skinner, Edwin E.	1886	Arctostaphylos uva ursi
Thevenet, Ernest J.	1888	Eugenia jambolaus
Topley, William H.	1888	Volumetric assay of aqua chlori
Troppmann, Charles M.	1881	Rhododendron occidentale
Tryon, James W.	1882	Mimulus glutinosus
Turner, Guy S.	1885	Examination of bromide of potassium
Topley, James H.	1885	Volumetric estimation of ammonium, potassium, and sodium hydrates
Van Werthern, Joseph	1889	Arbutus Menziesii
*Vreeland, Ph. L.	1879	Syrupus ferri iodidi
*Young, Wilfred M.	1882	Megarrhiza Californica
Wagener, Allen C.	1889	Linum
Wall, Henry A.	1883	Erythroxylon coca
Waller, Julian L.	1889	Estimation of Caffeine
Walsh, Andrew D.	1884	Malva rotundifolia
Warren, Joseph S.	1887	Liquor ferri chloridi
Weihe, Otto A.	1889	Salix nigra
Weiss, Philip	1878	Leeches
Williams, Laurence E.	1889	Noregamia alata
White, Thomas J.	1888	Franciscea uniflora
Whitney, William B.	1884	Euphorbia eremocarpus
Wight, David	1882	California drug law
Wulzen, Dietrich H., Jr.	1887	Cicuta Californica
Zemansky, J. H.	1878	Nicotiana tabacum

* Deceased.

OFFICERS OF THE ALUMNI ASSOCIATION OF THE CALIFORNIA COLLEGE OF PHARMACY.

President:

F. T. GREEN.

Vice-President:

GEORGE J. HARVEY.

Secretary:

EMERY P. GATES,

(1324 Market Street, San Francisco.)

Treasurer:

J. S. WARREN.

Executive Board.

(Elected for two years.)

1889 to 1891.

J. J. B. ARGENTI.

H. E. D. BESTHORN.

1890 to 1892.

E. D'ARTENAY.

C. P. ELWERT.

ROLL OF MEMBERS OF THE ALUMNI ASSOCIATION.

		Class.
Argenti, J. J. B.	S. E. cor. Third and Folsom Streets, San Francisco	1881
Bacon, G. E.	26 Main Street, San Francisco	1875
Barbat, J. H.	1702 Folsom Street, San Francisco	1880
Barbat, Josephine E.	Care Langley & Michaels, San Francisco	1884
Beckett, F. A.	23 Second Street, San Francisco	1883
Beaizley, G. T.	Powell and Sutter Streets, San Francisco	1885
Beck, H. M.	Cor. California and Steiner Streets, San Francisco	1889
Bowen, C. P.	124 Ellis Street, San Francisco	1889
Besthorn, H. E. D.	65 Minna Street, San Francisco	1884
Bodkin, Thos. P.	102 Eddy Street, San Francisco	1887
Bratton, Fred. O	Cor. Nineteenth and Valencia Streets, San Francisco	1887
Calegaris, J.	S. E. cor. Kearny and Pacific Streets, San Francisco	1882
Cox, L. H.	735 Turk Street, San Francisco	1889
D'Artenay, E.	N. E. cor. Post and Mason Streets, San Francisco	1882
Delicat, J. F. A.	542 Kearny Street, San Francisco	1888
Devine, John	S. E. cor. Kearny and Clay Streets, San Francisco	1877
Dick, W. H.	726 Minna Street, San Francisco	1884
Dignan, M. H.	Santa Rosa, California	1883
Drossel, August H.	N.W. cor. Powell and Jackson Streets, San Francisco	1886
Dubois, P. A.	Cor. Leavenworth and Clay Streets, San Francisco	1880
Davis, W. J.	318 Montgomery Avenue, San Francisco	1885
Elwert, C. P.	1412 Post Street, San Francisco	1881
Emerson, H. B.	Los Gatos, California	1888
Fletcher, D. M.	Cor. Geary and Stockton Streets, San Francisco	1881
Fevrier, J. P.	1124 Stockton Street, San Francisco	1881
Gates, E. P.	1324 Market Street, San Francisco	1887
Gerdes, H. G.	Seventeenth and Guerrero Streets, San Francisco	1889
Gove, D. M.	N. W. cor. California and Fillmore Sts., San Fran.	1881
Grazer, F. A.	Sixth and Harrison Streets, San Francisco	1880
Green, F. T.	Fell and Devisadero Streets, San Francisco	1882
Hall, B. F.	Sixth and Harrison Streets, San Francisco	1889
Harvey, Geo. J.	Care Langley & Michaels, San Francisco	1889
Happersberger, E.	Sixth and Market Streets, San Francisco	1882
Haman, Henry	Sixth and Mission Streets, San Francisco	1887
Hughes, Sam. F.	Grant Avenue and Morton Street, San Francisco	1886
Hughes, Thos.	Third and Market Streets, San Francisco	1886
Hulting, B. F.	Third and Folsom Streets, San Francisco	1880
Hurtzig, W. F. N.	140 Third Street, San Francisco	1881
Harris, H. R.	S. E. cor. Market and Steuart Sts., San Francisco	1876
*Jones, M. L.	Cherokee Flat, California	1883
Joy, Edwin W	Cor. Bush and Market Streets, San Francisco	1878
Judson, R. H.	320 Sansome Street, San Francisco	1882
Kahn, A. J.	920 Market Street, San Francisco	1875
Kelsey, H. D.	Redwood, California	1888
Leber, A. L.	Seventh and Market Streets, Oakland, California	1884
Loehr, G. W.	Geary and Devisadero Streets, San Francisco	1883
McCarthy, J. H.	437 Larkin Street, San Francisco	1888
Meyer, August W.	Second and Mission Streets, San Francisco	1887

* Deceased.

		Class.
Minor, G. W.	N. E. cor. Turk and Taylor Streets, San Francisco	1879
Mohun, Charles C.	1825 Eddy Street, San Francisco	1887
Moore, C. C.	Stockton, California	1878
Maloney, Edward J.	Alameda, care C. B. Elbe	1886
Morgan, H. F.	124 Ellis Street, San Francisco	1889
Munson, J. G.	San José, California	1884
Mayer, O. T.	Cor. Octavia and Geary Streets, San Francisco	1885
Newby, T. S.	San Buenaventura, California	1884
O'Neill, A. E.	Cor. Post and Mason Streets, San Francisco	1889
Oberdeener, S.	Santa Clara, California	1880
Oberdeener, Geo.	Stockton, California	1884
Perkins, P. J.	Twenty-fourth and Valencia Streets, San Francisco	1888
Prien, H. F.	Coronado Beach, California	1885
Ray, F. E.	Sacramento, California	1876
Reilley, P. H.	Seventh and Broadway Streets, Oakland, California	1883
Roturier, E.	225 Montgomery Avenue, San Francisco	1883
Sanborn, William K.	Benicia, California	1888
Schmelz, C. J.	400 Hayes Street, San Francisco	1885
Scholl, A. L.	Cor. Nineteenth and Mission Streets, San Francisco	1881
Seifert, Charles A.	Davisville, California	1887
Sommer, Ad.	Berkeley, California	1879
Skilling, H. H.	Oakland, California	1885
Skinner, Edward E.	Eureka, California	1886
Thevenet, E. J.	225 Geary Street, San Francisco	1888
Troppmann, C. M.	S. W. cor. Sixth and Folsom Streets, San Francisco	1881
Topley, J. H.	Vallejo, California	1885
Turner, G. S.	Modesto, California	1885
Wall, H. A.	Vancouver, Washington	1883
Walsh, A. D.	Redwood City, California	1884
Warren, J. S.	1144 McAllister Street, San Francisco	1887
Wight, D.	San José, California	1882
White, Thomas J.	Potrero Ave., bet. 22d and 23d Sts., San Francisco	1888
Whitney, W. B.	Healdsburg, California	1884
Weihe, O. A.	Modesto, California	1889

Members are requested to notify the Secretary of any change in residence.

Members dropped from the roll for non-payment of dues: F. M. Boswell, H. W. Korper, F. L. Krause, S. L. Leszynsky, D. D. Lustig.

.....TH ANNUAL JUNIOR COURSE STATISTICS.

CALIFORNIA COLLEGE OF PHARMACY.

UNIVERSITY OF CALIFORNIA.

DEPARTMENT OF PHARMACY.

SAN FRANCISCO.....18__

(First, middle, and last name must be written in full.)

Full name

Address { At home.....
In San Francisco

Where were you born?.....

In what year, and on what date?

How long have you been employed in a retail drug store?.....

When were you first so employed?

With whom?.....

By what firm are you employed at present?

First, Second, or Third Course?

Where was previous course taken?.....

Was Junior examination passed?.....

.....

Persons applying for matriculation will be requested to answer the above questions.

UNIVERSITY OF CALIFORNIA.

MEDICAL DEPARTMENT.

FACULTY.

Horace Davis, A.B., President of the University.

G. A. Shurtleff, M.D., Emeritus Professor of Mental Diseases and Medical Jurisprudence.

M. W. Fish, M.D., Emeritus Professor of Physiology and Microscopy.

R. Beverly Cole, A.M., M.D., M.R.C.S., Eng., Professor of Obstetrics and Gynecology.

W. F. McNutt, M.D., M.R.C.P., Edin., etc., Professor of Principles and Practice of Medicine.

Robert A. McLean, M.D., Professor of Clinical and Operative Surgery, Dean.

W. E. Taylor, M.D., Professor of Principles and Practice of Surgery.

A. L. Lengfeld, M.D., Professor of Materia Medica and Medical Chemistry.

William B. Lewitt, M.D., Professor of Anatomy.

Benjamin R. Swan, M.D., Professor of Diseases of Children.

William H. Mays, M.D., Professor of Mental Diseases and Medical Jurisprudence.

Washington Ayer, M.D., Professor of Hygiene.

George H. Powers, A.M., M.D., Professor of Ophthalmology and Otology.

William Watt Kerr, A.M., M.B., C.M., Professor of Clinical Medicine.

Arnold A. D'Ancona, A.B., M.D., Professor of Physiology.

Douglass W. Montgomery, M.D., Professor of Pathology and Microscopy.

G. C. Simmons, M.D., Lecturer on Therapeutics.

John M. Williamson, M.D., Demonstrator of Anatomy.

Winslow Anderson, M.D., Assistant to the Chair of Materia Medica and Medical Chemistry.

Jules Simon, M.D., Assistant to the Chair of Mental Diseases and Medical Jurisprudence.

C. A. Von Hoffman, Assistant to the Chair of Obstetrics and Gynecology.

John H. Barbat, Ph.G., M.D., Assistant Demonstrator of Anatomy.

COLLEGE DISPENSARY STAFF.

Jules Simon, M.D. H. W. Dodge, M.D. D. W. Montgomery, M.D.

ROBERT A. McLEAN, M.D., Dean,
603 Merchant Street, corner of Montgomery,
San Francisco, California.

UNIVERSITY OF CALIFORNIA.

COLLEGE OF DENTISTRY.

TOLAND HALL, STOCKTON STREET, BETWEEN CHESTNUT AND FRANCISCO STREETS, SAN FRANCISCO, CAL.

FACULTY.

HORACE DAVIS, A.B., President of the University, and ex officio President of the Faculty.

JOSEPH LE CONTE, M.D., LL.D., Honorary Professor of Biology.

C. L. GODDARD, A.M., D.D.S., Professor of Dental Art and Mechanism.

L. L. DUNBAR, D.D.S., Dean and Professor of Operative Dentistry and Dental Histology.

MAURICE J. SULLIVAN, D.D.S., Professor of Dental Pathology and Therapeutics.

W. E. TAYLOR, M.D., Professor of Surgery.

A. L. LENGFELD, M.D., Professor of Materia Medica and Medical Chemistry.

WILLIAM B. LEWITT, M.D., Professor of Anatomy.

A. A. D'ANCONA, A.B., M.D., Professor of Physiology and Microscopy.

LECTURERS, DEMONSTRATORS, AND ASSISTANTS.

CHARLES BOXTON, D.D.S., Lecturer on Mechanical Dentistry.

J. L. ASAY, M.D., Lecturer on Oral Surgery.

HARRY P. CARLTON, D.D.S., Demonstrator of Operative Dentistry.

CHARLES BOXTON, D.D.S., Demonstrator of Mechanical Dentistry.

M. F. GABBS, D.D.S., Demonstrator of Continuous Gum.

J. T. ROWAND, D.D.S., Demonstrator of Crown and Bridge Work.

JOHN M. WILLIAMSON, M.D., Demonstrator of Anatomy.

WINSLOW ANDERSON, M.D., Assistant to the Chair of Materia Medica and Medical Chemistry.

EUGENE PAYNE, D.D.S., Assistant Demonstrator of Operative Dentistry.

S. A. HACKETT, D.D.S., Assistant Demonstrator of Mechanical Dentistry.

E. W. PRATT, D.D.S., Assistant to Chair of Metallurgy.

JOHN H. BARBAT, Ph.G., M.D., Assistant Demonstrator of Anatomy.

CLINICAL INSTRUCTORS.

H. C. DAVIS, L.D.S.
B. W. HAINES, M.D., D.D.S.
W. B. KINGSBURY.
H. E. KNOX, D.D.S.
F. J. LANE, D.D.S.,
W. E. PRICE, D.D.S.
F. J. SAXE, A.M., D.D.S.
MAX SICHEL.
L. VAN ORDEN, M.D.
WILLIAM WOOD.
A. F. MCLAIN, M.D., D.D.S.

The session of 1890 begins February third, and ends October thirty-first.

REQUIREMENTS FOR ADMISSION.

Every candidate for admission must be eighteen years of age, must present to the Faculty satisfactory evidence of a good moral character, and must be examined as to his previous education and fitness to appreciate the technical study of Dentistry. The examinations will be chiefly in writing, and will embrace the following subjects, viz.: Arithmetic, Geography, English Grammar and Composition, United States History, Natural Philosophy, and Chemistry.

JUNIOR EXAMINATIONS.

At the end of the Junior year students will be examined in Anatomy, Physiology, Chemistry, Histology, and Mechanical Dentistry, and those who are qualified will receive certificates of admission to the Senior Class.

REQUIREMENTS FOR GRADUATION.

The candidate for the Degree of Doctor of Dental Surgery must have attained the age of twenty-one years, and be of good moral character.

He shall have passed a satisfactory examination, both oral and written.

He shall have studied Dentistry *three* years, including the time spent in attending lectures.

Beginning with the session of 1891, attendance upon *three* full courses of lectures will be required, according to the rules of the National Association of Dental Faculties.

He shall have attended two full courses in the Dental Department of the University of California, or one year in some other reputable Dental College, and the second or last in this College.

Graduates in medicine may apply for the Degree of Doctor of Dental Surgery, after having two full years of practical instruction or experience in Dentistry, one year of which, including one course of lectures, must be spent in the Dental Department of the University of California.

After these requirements have been complied with, upon the recommendation of the Faculty and approval of the Board of Regents, the candidate shall receive the Degree of Doctor of Dental Surgery.

FEES.

The matriculation fee will be (paid once)	$5 00
Tuition (first year)	120 00
Tuition (second year)	120 00
Tuition (third year)	Free.
Fee of Demonstrator of Anatomy (each year)	10 00
Diploma fee	30 00

L. L. DUNBAR, D.D.S., Dean,
500 Sutter Street, San Francisco, Cal.

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CALIFORNIA COLLEGE OF PHARMACY,

113 Fulton Street, San Francisco.

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PROSPECTUS

OF THE

TWENTY-FIRST ANNUAL SESSION

OF THE

California College of Pharmacy,

DEPARTMENT OF PHARMACY, UNIVERSITY OF CALIFORNIA,

113 Fulton Street, San Francisco, Cal.

Between Polk Street and Van Ness Avenue.

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UNIVERSITY OF ILLINOIS.

SESSION OF 1893

Preliminary Examination, Friday, April 7th.
Lectures begin Tuesday, April 19th.

SAN FRANCISCO:
CALIFORNIA COLLEGE OF PHARMACY.
1893.


ACME ENGRAVING CO. N.Y.
Library & Museum

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Preliminary Examination, Friday, April 7th.
Lectures will begin Tuesday, April 19th.

Alumni of this College and others who wish to receive this Prospectus are requested to forward their names and addresses to the Dean.

Time Required to Complete Curriculum, One Year and Seven Months,

AS FOLLOWS:

Junior Course: 7 Months, April 7 to November 10;
Vacation: 4 Months, November to March;
Senior Course: 8 Months, March 6 to November 10.

SAN FRANCISCO:
California College of Pharmacy.
1893.

OFFICERS

OF THE

California College of Pharmacy.

PRESIDENT:

CLINTON E. WORDEN, Ph. C., San Francisco.

VICE PRESIDENTS:

First Vice President, H. S. MELVIN, M. D., East Oakland.

Second Vice President, J. H. DAWSON, Ph. G., S. F.

SECRETARY:

GEO. J. HARVEY, Ph. G., 34 First Street, S. F.

TREASURER:

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WILLIAM T. WENZELL, M. D., Ph. G., Ph. M.

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FACULTY

OF THE

California College of Pharmacy.

MARTIN KELLOGG, A. M.

President of the University of California.

WILLIAM T. WENZELL, M. D., Ph. G., Ph. M.,

Professor of Chemistry,

No. 432 Oak St.

WILLIAM M. SEARBY, Ph. C.,

Professor of Materia Medica, and DEAN,

No. 859 Market Street.

HERMANN H. BEHR, M. D.,

Professor of Botany,

Academy of Sciences.

FRED A. GRAZER, Ph. G., M. D.

Professor of Theory and Practice of Pharmacy.

Berkeley, Cal.

J. J. B. ARGENTI, Ph. G.,

Professor of Microscopy and Vegetable Histology.

53 Stevenson St.

FRANK T. GREEN, Ph. G.,

Director of the Laboratories and Professor of Analytical and Pharmaceutical Chemistry

No. 500 Devisadero St.

INSTRUCTORS:

Instructor in Chemistry . . . E. H. SAMUELS, Ph. G., M. D.
" Pharmacy . . . H. E. D. BESTHORN, Ph. G.
" Materia Medica . C. A. SEIFERT, Ph. G.
" Botany JOSEPHINE E. BARBAT, Ph. G.
" Microscopy and Vegetable Histology,
M. R. GIBSON, Ph. G.
" Analytical and Pharmaceutical Chemistry,
A. E. O'NEIL, Ph. G.

SCHEDULE OF LECTURES, 1893.

TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
SENIORS.	JUNIORS.	SENIORS.	JUNIORS.
9 10 A.M.—Chemistry.	9–10 A.M.—Chemistry.	9–10 A.M.—Materia Medica.	9–10 A.M.—Chemistry.
10–11 " —Pharmacy.	10–11 " —Pharmacy.	10–11 " —Pharmacy.	10–11 " —Materia Medica.
11–12 " —Botany.	11–11:45 —Botany.	11–12 " —Microscopy and Histology.	11–12 " —Microscopy and Histology.
	11:45–12:30—Materia Medica.		

ALUMNI REVIEWS.

MONDAYS.

9 to 10 A. M.—Microscopy and Histology.
10 to 11 " —Botany, *Juniors;* alternating with Chemistry, *Juniors.*
10 to 11 " —Materia Medica, *Seniors;* alternating with Pharmacy, *Seniors.*
11 to 12 " —Materia Medica, *Juniors;* alternating with Pharmacy, *Juniors.*
11 to 12 " —Botany, *Seniors;* alternating with Chemistry, *Seniors.*

Students are required to attend at least two-thirds of these quizzes, as shown by the roll-call of their instructors.

PREFATORY.

The Trustees of the California College of Pharmacy take pleasure in presenting to the pharmacists and druggists of the Pacific Coast this Prospectus of the Twenty-first Annual Course of Instruction.

Important Changes. The session of the preceding year has been characterized by several important changes in the curriculum of the College. One was that of the changing the time of all the sessions, including Lectures, Laboratory work, and Quizzes, from the evenings to the mornings from 9 to 12, and also an extension of time of the Senior course from six to eight months. These changes, experimental as they appeared at that time, have proved to be of material benefit both to the students and the teachers, and they have also fully realized the expectations of the Trustees of the College. But the late Board of Trustees did not then and there rest its labors to benefit the College. They suggested and recommended the inauguration of a Syllabus of Lectures for each of the chairs, outlining systematic courses to be followed by the Faculty as a means of more thorough instruction. The present Board of Trustees have adopted the proposed Syllabi, which, as will be seen, are incorporated in this Prospectus.

Another important change introduced by the present Board is the creation of another chair, that of a Professor of Analytical Chemistry.

The times demand that an educational institution like the California College of Pharmacy should be fully up, both in lecture facilities and equipments, to the best Eastern sister colleges. Having a staff of six thoroughly qualified Professors

and six able Instructors, it needs but little imagination to predict that the session of 1893 will equal if not excel that preceding years.

Preliminary Examination.—The present requirements, being set at a standard only equal to that for entrance to the High Schools of this State, exclude no one who has a prospect of becoming a moderately proficient student. Every pharmacist should, when receiving young men into his employ as apprentices or beginners, see that they have a sufficient common school education to enable them to take up with profit the studies required in the calling of the apothecary. Whenever, through misfortune or other unfavorable circumstances, youths have not been able to attend school long enough to obtain the proper education, employers should insist upon their making up the deficiency in this respect without delay. Since young men are recommended not to enter the College until they are eighteen years of age, those who intend to make pharmacy their vocation, should use their spare time before they reach that age in obtaining, at least, a good common school education. In this city good night schools and evening classes give ample opportunity for pursuing these preparatory studies. Students should also master the rudiments of Latin, if possible, before entering the College, as the other studies demand all the time and attention that can be given to them. Nevertheless, to meet the circumstances of some students, the examination in *Latin* is deferred until *the close of the Junior term.* Those who desire the aid of a teacher in this language will be at liberty to select their own and arrange with him for the hours of recitations.

Previous Experience in Drug Stores.—Applications are frequently made by persons who wish to enter the College before they have had any experience in pharmacy. In all such cases the Trustees advise the applicants to find employment in a drug store for at least a year before attending lectures. The practical knowledge thus gained enables students to understand the lectures better, and therefore to make more satisfactory progress.

Periodical Examinations.—These examinations will be held

bimonthly during the lecture season, and the Faculty will be assisted in conducting them by five committees of the Board of Trustees—one for each chair. This plan has been found to stimulate earnest, continuous study from the very opening of the term to its close.

Thesis.—It has been decided that Senior students will not be required to present a Thesis as one of the conditions of graduation, but in its place an account of original work done in the laboratory, such as an analysis of a drug, or a pharmaceutical or chemical preparation, approved by the Director of the Laboratory and made by the candidate under his supervision.

Instructors.—On the recommendation of the Alumni Association of this College, the Trustees have directed the appointment of an Instructor as assistant for each chair, to assist the students in reviewing the lectures of the several Professors. Such reviews, when well conducted, have always been helpful, serving to impress many facts and principles upon the memory, promoting inquiry, inciting a generous emulation, and adding to the enjoyment as well as to the profit of associated study.

Time of Year of Lecture Course.—Contrary to the custom in eastern and western Colleges of Pharmacy, the lectures of this College are delivered in the summer months. This enables the Professor of Botany to give his instructions by demonstration in Field Botany at the same time that the other lectures are given. It is the season when business in this city is lightest, thus rendering it more easy for clerks to find time to attend lectures and to study at home.

San Francisco as an Educational Center.—San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, which the students of

this College have been privileged to visit, and which no intelligent person can see without profit. The University of California is near by, and there is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical, and physiological chemistry.

Description of the College Building.—The College Building is a matter of pride and satisfaction to all who are interested in pharmaceutical education on the Pacific Coast, and as intending students may not have read the description of it published after its completion, it is here reprinted.

The building is centrally located, being on Fulton street, west of Polk, near the New City Hall, and is easily reached by nearly all the lines of cable and horse cars. It is 30x80 feet in size, three stories high in front, and two in the rear. The ground floor has one room for Museum and Library, and another for the professors; behind these is a Lecture Hall, 30x45 feet. Over the Lecture Hall is the Laboratory, of the same size. On the same floor are two rooms, used by the students in their various classes. The larger of these, the Alumni Quiz Room, is now used as a Microscopical Laboratory, capable of accommodating thirty students at a time. The third story consists of a small dwelling of five rooms, where the Curator resides. Additions to the apparatus, etc., are being made from time to time, the latest being a beautiful polariscope, made in Germany by Wild, presented to the College by the Faculty of the College of Dentistry, session of 1892.

Preliminary Examination.

MATRICULATION.

Every applicant for admission to the regular course for graduation at this College will be required to pass a preliminary examination, or to present a diploma or other satisfactory written evidence that he has passed the first grammar grade, and is entitled to enter a High School of this State, or has attended some academy of a grade equal to that of our High Schools. Those who do not present such certificates will be examined in English reading and composition, writing, geography and arithmetic. Candidates will, therefore, be at the College on

Friday, April 7, at 9 A. M.,

For the purpose of matriculating, when those who are possessed of satisfactory certificates will be allowed to matriculate without examination, and all others will be examined in the above mentioned branches.

THE LECTURES

Will be delivered in the halls of the College of Pharmacy, 113 Fulton street, between Polk and Van Ness avenue, on Tuesday, Wednesday, Thursday and Friday mornings, from 9 to 12 o'clock. The lectures will commence on Tuesday, April 11, and terminate the 10th of November. In order that students may derive the fullest benefits from the lectures, they should be present at the opening of the session. *Those who have not attended two-thirds of the lectures will be debarred from coming up for examination at the close of the term.*

CHEMISTRY.

PROFESSOR WILLIAM T. WENZELL, M. D., PH. G., PH. M.

Junior Course.

The lectures to the Junior Class will be delivered on Wednesdays and Fridays from 9 to 10 A. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, the electro-chemical theory, the equivalence of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmaceutical student.

Senior Course.

The lectures to the Senior Class will be delivered on Tuesdays from 9 to 10 A. M.

In the Senior Course the student will be instructed in the more advanced departments of chemical philosophy, molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives, alcohols, ethers, acids, glucosides, alkaloids, etc., will receive their due share of attention.

MATERIA MEDICA.

PROFESSOR WILLIAM M. SEARBY, PH. C.

Junior Course.

The Lectures will be delivered to the Junior Class every Wednesday from 11:45 to 12:30, and on Fridays from 10 to 11 A. M., and will begin by referring to drugs derived from the vegetable kingdom. These will be taken up according to the Natural Orders of the plants from which they are obtained. A description of the parts of the plants used and officially rec-

ognized will be given; and also their physical properties, uses and doses.

Their source, period of collection, selection as to quality, manner of preserving and commercial history will be referred to. The latter part of the term will be devoted to the study of the drugs of animal origin officially recognized. They will be fully considered as to their source, description, mode of collection, constituents, medicinal properties, doses and preparations.

Senior Course.

The lectures for the Senior Class will be delivered every Thursday, from 9 to 10 A. M.

Following a pharmacognostical arrangement, the drugs will be studied *comparatively* and in groups, points of resemblance and difference being shown, thus training the student in the observation of those characteristics by which the identity of each article may be established, its quality approximately judged, and substitutions and adulterations detected.

The details of Pharmaceutical manipulations being dependent upon a knowledge of the *chemical composition* of the various drugs operated upon, a large portion of these lectures is devoted to this part of the subject, certain typical drugs being dwelt upon exhaustively, while others are considered in a less detailed manner.

Towards the close of the term, the new synthetical remedies will be studied, their chemical constitution, properties, uses and doses being carefully noted.

BOTANY.

PROFESSOR HERMANN H. BEHR, M. D.

The lectures will be delivered on Wednesday of each week to the Junior Class from 11 to 11:45, and to the Senior Class on Tuesdays from 11 to 12. The lectures include elementary, structural, and systematic botany. Practical instruction in the identification of plants from scientific description, is given in the lecturing room, as on excursions which will be made in addition to the regular lectures. The lectures for the Senior

Class will begin in March. The attendance on these preliminary lectures, which formerly was optional with the student, is now obligatory.

For those students having special interest in botany, lectures and excursions will begin about March 9, as much of the flora peculiar to this section of our country is obtainable only at this season of the year. The attendance on these preliminary lectures and excursions is optional with the student.

THEORETICAL AND PRACTICAL PHARMACY.

PROFESSOR FRED A. GRAZER, PH G., M. D.

Junior Course.

Lectures to the Junior Class on Wednesday from 10 to 11 A. M.

The lectures to the Junior Class will be so arranged as to conform with the general requirements of young men entering stores, advancing in a gradual and practical manner. Beginning with the consideration of the United States Pharmacopœia, its standard formulæ and authority, and the Pharmacopœias of other countries, passing on to the consideration of Weights and Measures, the Balance, the principles of its construction, methods of testing it, and its different forms and modifications, Specific Gravity and Apparatus for its determination, Heat, its generation, measurement, apparatus, and pharmaceutical uses, the various pharmaceutical manipulations required for the manufacture of preparations as well as the apparatus employed, extemporaneous pharmacy and prescription reading.

Senior Course.

Tuesdays and Thursdays from 10 to 11 A. M.

In this course the various preparations of the United States Pharmacopœia will be taken up for consideration in the manner outlined in the syllabus, also many of the important non-official preparations of the National Formulary. All of the more powerful and active preparations will receive careful con-

sideration as to their physiological action, therapeutic use and Toxicology.

The class will also receive practical instruction in Urine Analysis.

MICROSCOPY AND PHARMACOGNOSY.

PROFESSOR J. J. B. ARGENTI, PH. G.

To Juniors from 11 to 12 A. M. Fridays, and to Seniors on Thursdays at the same hour.

The object of this course is to make the student familiar with the microscope and its manipulation, and to study the many important vegetable drugs employed in medicine.

During the course the student will be instructed in the manner of preparing the different classes of specimens for examination and study, in the making and mounting of sections, and drawing with aid of the camera lucida.

The lectures will be held in the College building, commencing Thursday, April 20, 1893. They will begin with a short history of the microscope, the description of its various parts, and the principal accessories which are usually employed with it. The vegetable cell, its structure and contents, structure of stems, roots, leaves, seeds, etc., will be shown and explained.

The student will also be instructed in the latest processes of photo-micrography, and in other processes by which photography may help in the study of pharmacognosy.

LABORATORY FOR PHARMACEUTICAL AND CHEMICAL MANIPULATION AND ANALYTICAL CHEMISTRY.

PROF. FRANK T. GREEN, PH. G.

Hours: 9 to 12 A. M., Tuesdays, Wednesdays, Thursdays, and Fridays.

This department is fully equipped with apparatus and accessories which are needed for a thorough instruction in these branches. It comprises a commodious and well-lighted laboratory containing forty tables, each furnished with a complete set of chemical reagents suitable for a systematic course

of qualitative analysis. Operations on a larger scale, as distillations, ignition, combustion, etc., are executed on a long side table provided for that purpose; and for the generation of unpleasant and noxious gases, such as hydrogen sulphide, chlorine, sulphurous oxide, etc., a suitable fume chamber has been constructed. A special room is also provided with analytical balances for the use of the more advanced students.

Pharmaceutical Course.

The Pharmaceutical Course will embrace the ordinary pharmaceutical manipulations, such as percolation, evaporation, filtration, crystallization, sublimation, oxidation, reduction, fusion, dialysation, etc., together with the preliminary practical laboratory work and the preparation of pharmaceutical chemicals as laid down in Trimble's Analytical Chemistry and Remington's Pharmacy.

This course demands sixteen lessons of three hours each, from 9 to 12 A. M.

Each student is required to furnish the following apparatus:

APPARATUS SUPPLIED BY COLLEGE.	APPARATUS FURNISHED BY STUDENT.
One sixteen ounce flask.	Half quire white filtering paper.
One eight ounce flask.	One three-inch spatula.
One sixteen-ounce evaporating dish.	One triangular file.
One set of beakers (4 in nest).	One small pair of scissors.
One dozen five-inch test tubes.	Two doz. assorted corks, Nos. 6 to 12.
One test-tube cleaner.	One-fourth pound glass tubing.
One four ounce funnel.	One foot gum tubing.

The student is also required to bring his own crude drugs, and such apparatus as ordinarily found in drug stores, and is entitled to keep his own products, after they shall have been examined and passed upon by the Professor and the Examiners.

Apparatus not included in the above list will be furnished without additional charge, students being required to return the same in good order or pay for all damage.

TEXT-BOOKS: Practical and Analytical Chemistry, by Henry Trimble, Ph. G., and Remington's Pharmacy.

Analytical Course.

The Analytical Course will embrace a thorough, systematic course of qualitative and quantitative chemical analysis, both

volumetric and gravimetric; the identification of the more important organic and inorganic poisons; the detection of adulterations in medicinal chemicals; and proximate analysis.

Special instructions will also be given, if desired, in the analysis of urine, milk, mineral and potable waters, etc. Students in this department will be furnished with all reagents, except those of silver, gold and platinum. Aside from the apparatus furnished by the College the following list will be required:

APPARATUS SUPPLIED BY COLLEGE.	APPARATUS FURNISHED BY STUDENT.
One set of beakers (4 in nest).	Half a quire fine filtering paper.
One dozen five-inch test tubes.	One three-inch spatula.
One test-tube holder.	One triangular file.
One test-tube cleaner.	One pair small scissors.
One two-ounce graduate.	Two doz. assorted corks, Nos. 6 to 12.
One two-ounce evaporating dish.	One quarter-pound glass tubing.
Two one-ounce funnels.	One quarter-pound glass rods.
One eight-ounce gas bottle.	One ounce 10% sol. nit. silver.
One four-ounce flask.	Half ounce sol. chlor. platinum.
One half-ounce crucible.	A square inch platinum foil, thin.
One one-ounce crucible.	Six inches thin platinum wire.
One pair crucible tongs.	
One blowpipe.	
One triangle.	
One lump of willow charcoal.	
One piece of blue glass.	
One piece of wire gauze.	

Reagents and apparatus not included in the above list, such as burettes, graduated instruments, condensers, volumetric solutions, platinum ware, etc., are furnished to Senior students without additional charge, students being required to return such apparatus in good order or pay for all damage.

TEXT-BOOKS: Trimble's Practical and Analytical Chemistry, Thorpe's Quantitative Analysis and Elliot and Storer's Qualitative Chemical Analysis.

REFERENCE BOOKS: Examination of Medicinal Chemicals by Hoffmann and Power, Prescott's Organic Analysis, Dragendorff's Proximate Plant Analysis.

This course requires twenty-four lessons of three hours each, from 9 to 12 A. M.

Each student will be furnished with a key to his desk in the laboratory on presenting the ticket for course issued to him by

the Dean. Students will be required to pay for all apparatus broken, damaged or lost by them, and the College apparatus and keys must be returned or settled for on or before the close of the term.

LATIN.

Many persons enter the profession of Pharmacy with little or no knowledge of Latin. Yet it is essential that they should know enough of it to enable them to read intelligently any physician's prescription that may be presented to them written in that language. The Trustees demand this small modicum of Latin of all whom they recommend for graduation. Persons who are not able to read Latin prescriptions *cannot become graduates of this College.* They can learn their Latin where they please. If a sufficient number of students desire it, the Trustees will provide a teacher for them.

EXAMINATIONS.

Preliminary Examination, see page 9.

PERIODICAL EXAMINATIONS DURING THE SESSION.

The system of written examinations at stated intervals adopted by this College has been highly beneficial. These examinations will take place bimonthly, in each of the subjects lectured upon by the several Professors.

The written questions and answers of these examinations will be preserved until the end of the session, and will be rated by the Examining Committee of the Board of Trustees; and the average rating of students, as shown by the results thus obtained, will constitute important factors in determining the relative fitness of Juniors for promotion to the Senior Class, or of Seniors who are candidates for graduation.

Attendance upon these examinations is compulsory. Any student unavoidably detained from being present is required to deliver to the Dean a statement in writing of the cause of his detention.

JUNIOR EXAMINATION.

(For Admission to the Senior Class.)

Junior students, whose rating in the bimonthly and final examinations shows satisfactory progress, will receive certificates entitling them to admission to the Senior Class at any subsequent session of the College.

Students who do not take the examination at the end of the lecture term cannot come up for examination at the opening of the next term.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, must produce sufficient evidence of their fitness; or, failing in this, they will will be required to pass the *Junior Examination.*

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a MODIFIED JUNIOR EXAMINATION.

A student in the Junior Class may, at the end of this course, select of the parts into which the Junior Examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, Microscopy), any number, not less than three, in which he may desire to be examined, notice of said selections to be given in writing to the Dean of the faculty on or before October first. If he pass in all the branches selected by him, the results will be placed to his credit; and at the close of the following term he may present himself for examination in the remaining branches, and if he pass also in these, he will be entitled to enter the Senior Class. *But no student will be allowed to enter*

the Senior Class, in any branch, until he shall have passed in all the branches of the Junior Class. If, at the first partial examination, he should fail in any branch selected, he will be re-examined in this branch also during his second year as Junior.

The student who takes out all his Junior tickets, and then elects to divide his examination in this way, may attend the second year as well as the first on these tickets.

SENIOR EXAMINATION.

The Senior Class will be examined for the degree of Graduate in Pharmacy, at the end of the session, in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopical Characteristics of Drugs, their doses and uses; Theoretical and Practical Pharmacy, and the Translation of Recipes from Latin into English, and from English into Latin. The practical examination will include the actual compounding of Prescriptions, and the identification and manipulation of Drugs and Chemicals in the presence of the Examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least *two full courses* of lectures, may, at the end of the Senior Course, present himself for examination in CHEMISTRY, BOTANY, MICROSCOPY, and MATERIA MEDICA (including the identification of specimens), reserving the remainder of his examination (THEORETICAL and PRACTICAL PHARMACY, and "COMMITTEE") until a subsequent year. He must give notice, in writing, to the Dean, on or before October 1st, of his intention to so divide his examination. If he pass in any or all of these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term, he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the Degree of Graduate in Pharmacy.

CONDITIONS OF GRADUATION.

Every person upon whom the Degree of Graduate in Pharmacy shall be conferred, must comply with the following conditions:—

1. He must be of good moral character.

2. He must have attained the age of 21 years.

3. He must have attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy.

4. He must have had four years' experience in a pharmacy where physicians' subscriptions are compounded. (His time actually spent in this College will be allowed to count as part of this term of four years.)

5. He must have done the required Laboratory work of this College.

6. He must present an account of some special work done in the Laboratory in lieu of a thesis, and exhibit some chemical or pharmaceutical product made under the supervision of the Director of the Laboratory.

7. He must have paid all his dues to the College, including ten dollars as a final examination fee, which will not be returned to him in the event of his failure to pass.

8. He must have attended at least two-thirds of the lectures in each chair, and also two-thirds of the quizzes.

No special examination will be held for candidates for the Degree, but only an examination at the end of the regular course.

Those who fail to appear for examination, or who do not pass satisfactorily, will be allowed to present themselves at any subsequent examination within two years, without further charge.

Candidates must be recommended jointly by the Faculty and Examining Board to the Regents of the University, by whom the Degree is conferred.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency in Chemistry, Materia Medica, Microscopy, Pharmacy and Botany will be granted to any of the students of the Senior Class who may pass satisfactory examinations in those subjects, and such certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescriptions are compounded. No certificate of Proficiency in Pharmacy will be issued unless the student has satisfactorily passed in all the branches. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subjects as is required in the general average.

Certificates of Proficiency for successful candidates under twenty-one years of age, or for those who have not had four years' experience, or for those who have passed in Chemistry, Materia Medica, Microscopy or Botany, must be paid for at the rate of two dollars each.

PRIZES.

Three prizes will be awarded at the close of the term, as follows:

Senior Class.

To the student whose examination shall be very satisfactory in every department, and who shall attain the highest general average at the periodical and final examinations, *a gold medal* offered by the College. If no candidate pass a very satisfactory examination no prize shall be given.

To the student whose examination shall be satisfactory in every department, and who shall stand second in the general

average at the periodical and final examinations, a suitable prize will be awarded.

Junior Class.

To the student who shall attain the highest average standing in the periodical and final examinations, *tickets to the Senior Course* will be given by the Trustees.

FEES.

To Junior students:

Matriculation ticket	$ 2 50	
Five Lecture tickets	62 50	
Alumni review class, four branches	10 00	
Laboratory	12 50	
		$87 50

To Senior students:

Laboratory ticket	$20 00	
Five Lecture tickets	62 50	
Alumni review, four branches	10 00	
Fee for Final Examination ("Diploma Fee") payable but once, but not refunded in case of failure	10 00	
		$102 50
Certificates of Proficiency, each		2 00

The final examination fee is to be paid when the candidate presents himself to be examined for the degree, or when he exchanges the Certificate of Proficiency for the Diploma.

TERMS FOR EXTRA LABORATORY INSTRUCTION.

From 9 o'clock A. M. to 12 o'clock M.

4 days each week, per month	$12 00
3 days	9 00
2 days	6 00
1 day	1 00

THE MATRICULATION AND LECTURE TICKETS must be taken out by each student in person, and must be endorsed by the

several professors within thirty days from the beginning of the lecture course.

GRADUATES of the College and students who have attended two sessions in the College are admitted free to the lectures.

Other students not intending to pursue pharmacy as their vocation, will be admitted to the lectures, or any of the courses they may desire to attend, by paying the matriculation fee and that of the chair or chairs of instruction. They may be examined in the special subject or subjects with the students of the Senior Class, and Certificates of Proficiency will be awarded to them on the same conditions as to the regular students. Special students will not, in any case, be eligible for the Degree of Graduate in Pharmacy.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the lectures and upon complying with all the requirements for graduation (other than a four years' experience in the retail drug business) shall receive a Certificate of Proficiency in Chemistry, Materia Medica, Microscopy and Botany, signed by the officers of the College.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in the Medical Department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to Graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design ultimately to engage in the practice of medicine.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1882, to further the interests of the College, and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

MEETINGS OF THE PHARMACEUTICAL SOCIETY.

These are held quarterly in the College building. They are for scientific purposes, and are intended to advance pharmaceutical knowledge and at the same time to encourage and promote a social feeling among the members. All students and graduates are cordially invited to be present.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 to 40 cents. Single furnished rooms may be had without board, for from $5.00 to $10 per month.

EMPLOYMENT.

Temporary situations while attending College may be obtained in the retail stores, and in the wholesale and manufacturing establishments, but the remuneration for such services is not great. Yet many of the students prefer to do some practical work during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influence to find employment for them.

THE COLLEGE CALENDAR—1893.

March 6—Monday, commencement of the Senior Laboratory Course.

March 6—Monday, commencement of the Senior Botany Course.

April 7—Friday, preliminary examination and martriculation.

April 11—Tuesday, opening of the regular Lecture Term.

April 24—Monday, opening of the Quiz.

May 8—Preceding Monday, vacation of one week.

May 11—Thursday, semiannual meeting of the California Pharmaceutical Society.

May 15—Monday, lectures resumed.

June 20—Tuesday, Senior, bimonthly examination.

June 21—Wednesday, Junior bimonthly examination.

July 3—Monday, vacation for one week.

July 10—Monday, lectures resumed.

Aug. 29—Tuesday, Senior bimonthly examination.

Aug. 30—Wednesday, Junior bimonthly examination.

Sept. 11—Monday, Junior Laboratory Course begins.

Nov. 9—Thursday, Senior Lecture Course closes.

Nov. 10—Friday, Junior Lecture Course and Laboratory Instruction close.

Nov. 11—Saturday, ticket issued by Dean for final examination.

Nov. 13—Monday, beginning of final Junior examination.

Nov. 14—Tuesday, beginning of the final Senior examination.

Nov. 16—Thursday, annual meeting of the California Pharmaceutical Society and College of Pharmacy.

TEXT-BOOKS.

U. S. PHARMACOPŒIA.

ORGANIC MATERIA MEDICA, by J. M. Maisch.

U. S. DISPENSATORY, by Wood, Remington and Sadtler.

NATIONAL DISPENSATORY, by Stillé and Maisch.

REMINGTON'S PRACTICAL PHARMACY.

THOME'S BOTANY.

BEHR'S FLORA OF THE VICINITY OF SAN FRANCISCO.

TRIMBLE'S PRACTICAL AND ANALYTICAL CHEMISTRY.

BARKER'S COLLEGE CHEMISTRY.

REMSEN'S ORGANIC CHEMISTRY (for Senior Class).

ELLIOT AND STORER'S QUALITATIVE ANALYSIS.

THORPE'S QUANTITATIVE ANALYSIS.

TWENTY-FIRST ANNUAL JUNIOR COURSE STATISTICS,

California College of Pharmacy,

UNIVERSITY OF CALIFORNIA.

DEPARTMENT OF PHARMACY.

SAN FRANCISCO..... 18..

(First, middle and last name must be written in full.)

Full name.....

Address { At home.....
In San Francisco.....

Where were you born?.....

In what year, and on what date?.....

How long have you been employed in a retail drug store?...

When were you first so employed?.....

With whom?.....

By what firm are you employed at present?.....

.....

First, Second, or Third Course?.....

Where was previous course taken?.....

Was Junior examination passed?...

Persons applying for matriculation will be requested to answer the above questions.

LECTURES.

SYLLABUS OF FIFTY LECTURES, JUNIOR CHEMISTRY.

BY PROF. W. T. WENZELL.

INORGANIC CHEMISTRY.

1. Introduction to physical science. General properties of matter,—extention, impenetrability, divisibility, indestructibility, porosity and inertia.

2. The attraction of matter,—gravitation, cohesion, adhesion. The three states of matter,—the gaseous, the liquid, the solid and the radiant.

3. Chemical attraction, analysis and synthesis, atoms and molecules.

4. Elements, division into metals and metalloids, symbols, atomic weights, notation, the laws of chemical combination, as exemplified in the quantitative law, the law of multiples, and the law of reciprocal proportions.

5. The law of equivalence or combining power of elements their classification, the variation of equivalencies. How to indicate equivalence. Graphic symbols.

6. The electro-chemical series, chemical reaction, analytical, synthetical and meta-thetical. Typical reactions illustrated by chemical equations.

7 and 8. Rules for writing chemical formulas and to name them. The multiplication of atoms and molecules. Definition of an acid and a base. The derivation of salts from acids and bases. Simple and compound radicals.

9. Oxygen. History,—occurrence in nature, preparation, physical properties, chemical properties, liquification, functions

in nature in relation to organic life, uses in arts and medicine.

10. Ozone. History,—occurrence in the atmosphere, preparation, physical and chemical properties, constitution and uses.

11. Hydrogen. History,—occurrence, preparation, physical and chemical properties, oxy-hydrogen blowpipe, effect on animals, its compounds with oxygen.

12. Water. Occurrence in nature, preparation. Its exact composition by analysis and synthesis. Physical properties, as water, as steam and as ice. Chemical properties, the formation of hydrates. Water of crystallization. Deliquescence and efflorescence.

13. Natural waters. Rain, spring, well, artesian, river and pond waters. The natural constituents of these, mineral.

14. Natural waters continued. Living organisms,—plants and animals, contaminated waters and their relation to a sanitary point of view. Selection of water for industrial and domestic purposes. Purification of water and its sanitary analysis. Sea water—its composition.

15. Mineral waters. Classification, saline, acidulous, chalybeate, sulphur, silicious, etc., with examples.

16. Hydrogen dioxide. History, preparation, properties, uses. Nitrogen. History, preparation, properties, physical and chemical properties. Functions in nature—its compounds.

17. The atmosphere. Its composition, its relation to combustion, to animal and vegetable life; microbes and their germs, relation to mold, fermentation, putrefaction, disease, sewer gas.

18. Compounds of nitrogen and oxygen. Nitrogen pentoxide. Nitric acid, occurrence, preparation, composition, impurities, properties, tests. Uses in arts and medicine.

Nitrogen monoxide. History, preparation, purification, properties, use as an anæsthetic.

19. Nitrogen dioxide, nitrogen trioxide, nitrous acid, nitro-

gen tetroxide—their preparation and their physical and chemical properties.

The metallic nitrates and nitrites.

20. Compound of nitrogen and hydrogen. Ammonia—occurrence, preparation, properties, tests, uses in the arts and medicine.

21. Carbon. Occurrence in nature. The diamond, graphite, amorphous carbon, anthracite, bituminous coal, charcoal, lampblack, gas carbon, their nature, properties and uses.

22. Compounds of carbon and oxygen, carbon dioxide, preparation, production by animal life, and by processes of fermentation. Its composition, physical and chemical properties, liquifaction, solidification, solubility in water. Carbonic acid, formation, tests, uses in plants, uses in the arts.

Carbon monoxide. Preparation, physical, chemical and physiological properties. Production by coal stoves.

23. Metallic carbonates.

24. The halogens.

Chlorine. Its discovery, occurrence, preparation, physical and chemical properties, tests. Compound of chlorine and hydrogen hydrochloric acid. Composition, preparation, properties, tests, and uses. Agua regia, composition and uses.

25. Oxides and acids of chlorine. Hypochlorous acid, chlorinated lime, javelle water, Labarraque's solution, bleaching.

Chloric acid and chlorates.

26. Metallic chlorides.

27. Bromine. Its discovery, occurrence, preparation, properties, tests and important compounds; hydrobromic acid, uses in arts and medicine. Iodine, discovery, occurrence, preparation, properties, tests, compounds and uses. Hydriodic acid.

Fluorine, history, occurrence, compounds. Hydrofluoric, acid, preparation, properties, tests, uses in arts.

28. Metallic bromides, iodides and fluorides.

29. Sulphur. History, occurrence, preparation, properties, varieties of sulphur tests. Metallic sulphides.

30. Compounds of sulphur and oxygen. Oxides and acids of sulphur. Sulphur dioxide, preparation, properties, uses in

arts and medicine. Sulphurous acid, preparation and properties.

31. Sulphuric oxide, preparation and properties.

Sulphuric acid, preparation, properties, test and uses.

Fuming sulphuric acid, composition, preparation, properties.

32. Metallic sulphates and sulphites. Thiosulphates.

33. Compound of sulphur and hydrogen, hydrogen sulphide, preparation, properties, tests and uses in analytical chemistry, metallic sulphides, carbon disulphide, preparation of salts, chlorides of sulphur.

34. Borax, occurrence, preparation, properties, boric acid, metallic borates.

Silicon, occurrence, preparation, properties, silicic acid, metallic silicates.

35. Phosphorus. History, occurrence, common phosphorus, preparation. Amorphous phosphorus, preparation, their properties and uses in arts and medicine, metallic phosphides.

36. Phosphuretted hydrogen, compounds, preparation, properties.

Oxides and acids of phosphorus, hypophosphorous acid, preparation, composition, properties, and use in medicine.

Pyrophosphoric acid, metaphosphoric acid and common phosphoric acid, their uses and preparation.

37. Metallic phosphates.

38 and 39. Arsenic—discovery, occurrence, preparation, physical and chemical properties.

Compounds of arsenic and sulphur, arsenuretted hydrogen, preparation, properties, oxides and acids of arsenic.

Arsenous oxide, occurrence, preparation, properties, tests, uses. Marsh's, Reinsch's and Fleitmann's tests. Arsenous acid, properties, arsenic oxide and arsenic acid, composition and preparation, metallic arsenates and arseniates.

40 and 41. Antimony, history, occurrence, preparation, physical and chemical properties.

Antimonuretted hydrogen, preparation, properties and tests.

Oxides and acids of antimony, sulphides of antimony, chlorides of antimony, tartar emetic.

42. Metals, definition, occurrenee in nature, physical prop-

erties, luster, opacity, color, specific gravity, malleability, ductibility, fusibility, volatility, alloys, crystallization, classification.

43. The Alkaline group,—Sodium, Potassium, Lithium, occurrence, preparation, physical and chemical properties and tests, Oxides and Hydrates.

44. The Earthy bases,—Calcium Barium and Strontium, occurrence, preparation, physical and chemical properties, tests.

Oxides and Hydrates.

45. The Magnesium group,—Magnesium, Zinc, Cadnium, occurrence, preparation, properties, tests.

Oxides and Hydrates.

46. Mercury, Silver, occurrence, preparation, properties, tests, Oxides and Hydrates.

47. Cerium, Tin, Lead, Bismuth, occurrence, preparation, properties and tests, Oxides, Hydrates and Acids.

48 and 49. The Iron group—Iron, Nickel, Cobalt, Manganese, Chromium and Aluminium, occurrence, preparation, properties and tests.

Oxides, Hydrates and Acids.

50. Uranium, Tungsten, Molybdenum, Gold, Platinum, Palladium, occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.

SYLLABUS OF TWENTY-FIVE LECTURES, SENIOR CHEMISTRY.

BY PROF. W. T. WENZELL.

ORGANIC CHEMISTRY.

1. Chemical Philosophy, Atomic Theory, the Law of Molecules, the Law of Mariotte, the Law of Charles, the Law of Avogadro.

2. Heat.—Source of heat, conduction of heat, expansion by heat, co-efficients of expansion for solids, liquids and gases.

3. The barometer, construction and uses in gasometry.

Specific heat and its relation to atomic weight, combination of gases by volume.

4. Gaseous diffusion, gasometry.

5. Proximate and elementary analysis, empirical, molecular and graphic formulas.

6. The principles of substitution in organic compounds.

7. Classification of organic bodies, homologous series, physical properties; density, melting and boiling points, optical properties. Paraffins or fatty compounds. Hydro-carbons, saturated and unsaturated. General formulas and properties.

8. Petroleum and its products—ozokerit, paraffin, illuminating gas and lubricating oils.

9. Haloid ethers, oxygen ethers, compound ethers, their preparations and properties.

10. Alcohols—their constitution and general formulas. Methyl, ethyl, propyl and amyl alcohols, their preparation and general properties.

11. Primary, secondary and tertiary alcohols, the products of their oxidation and nomenclature. Aldehydes and ketones. Isomerides of alcohols.

12. Higher monovalent alcohols and ethers. Divalent alcohols and glycols. Trivalent alcohols and ethers. Glycerine, nitro-glycerine, fats and soaps, butter and oleomargarine, oil, drying and non-drying, oleates.

13. Tetravalent, pentavalent alcohols and ethers.

14. Carbo-hydrates—glucoses, saccharoses, amyloses, nitrocelluloses, gums, etc.

15. The Glucosides—salicin, arbutine, myronic acid, helicin, etc. Fermentations—alcoholic or vinous, butyrous, lactous, gallous, amydalous, sinapous, pectous, mucous.

16. Aldehyde derivations—chloral, chloral-hydrate, croton chloral hydrate. Ketones, organic acids, constitution and general formula, properties, preparation. Formic, acetic, butyric, valeric, oxalic, succinic, tartaric, malic, citric, etc., acids.

17. Amides and derivatives—amine and ammonium bases, alkaloids, non-oxygenates.

18. Pyridines, picolin and chinoline; bases coniine, nicotine. Oxygenated alkaloids—opium bases, cinchona bases, strych-

nine, atropin, theo-bromine, cocaine, etc.; their constitution and properties.

19. Aromatic compounds—general characteristics of the benzine or aromatic series. Hydro-carbons—benzine, toluene, xylenes, mesitylene, cymene, naphthalene, anthracene.

20. The isomerism of the Substitution Products—Halogen-derivatives, nitro-compounds, amido-compounds, diazo-compounds, sulphonic acids, ketones and quinones.

21. The Phenoles—carbolic acid, cresol, naphtol, resorsin, hydro-chinone, orcin, pyro-gallol, etc. Aromatic aldehydes—benzoic, cinnamic, salicylic.

22. Aromatic acids—benzoic, tolnic, cinnamic, salicylic, gallic, tannic, phthalic, etc. Terpenes—camphors, volatile oils.

24. Aniline dyes—rosaniline, phthaleins, fluorescin, eosin, phenyl-acetyl derivatives, diphenyl derivatives, indigo, alizarin, purpurin.

25. The chemistry of new organic remedies.

SYLLABUS OF FIFTY LECTURES, JUNIOR MATERIA MEDICA.

BY PROF. W. M. SEARBY.

LECTURE 1. Introductory: What is Materia Medica? How viewed by physicians, and by pharmacists. Organic and inorganic—vegetable and animal drugs. How shall we study them? Why inquire into their source, habitat, collection, preservation, etc.? Identification, quality, composition, uses in pharmacy and medicine, and doses.

Classification of vegetable drugs according to origin.

Latin names of plants and their significance.

VEGETABLE DRUGS.

Natural Order—RANUNCULACEÆ: Pulsatilla, hydrastis, staphisagria.

LECTURE 2. Aconitum, cimicifuga.

LECTURE 3. *Nat. Ord.*—MAGNOLIACEÆ: Illicium, magnolia.

Nat. Ord.—MENISPERMACEÆ: Calumba, cocculus, menispermum, pareira.

LECTURE 4. *Nat. Ord.*—BERBERIDACEÆ: Berberis vulgaris and aquifolium, caulophyllum, podophyllum.

LECTURE 5. *Nat. Ord.*—PAPAVERACEÆ: Opium.

LECTURE 6. Other products of papaver somniferum, sanguinaria chelidonium.

Nat. Ord.—CRUCIFERÆ: Sinapis.

Nat. Ord.—VIOLACEÆ: Viola tricolor.

LECTURE 7. *Nat. Ord.*—POLYGALACEÆ: Senega, krameria.

Nat. Ord.—GUTTIFERÆ: Gambogia.

Nat. Ord.—MALVACEÆ: Althæa, malva, gossypium.

LECTURE 8. *Nat. Ord.*—STERCULIACEÆ: Oleum theobromæ, cola.

Nat. Ord.—LINACEÆ: Linum, erythroxylon.

LECTURE 9. *Nat. Ord.*—ZYGOPHYLLACEÆ: Guaiacum.

Nat. Ord.—GERANIACEÆ: Geranium.

Nat. Ord.—RUTACEÆ: Buchu, xanthoxylum, pilocarpus.

LECTURE 10. Citrus limonum, etc.

Nat. Ord.—SIMARUBACEÆ: Simaruba, quassia.

Nat. Ord.—BURSERACEÆ: Myrrha.

Nat. Ord.—CELASTRINEÆ: Euonymus.

LECTURE 11. *Nat.Ord.*—RHAMNACEÆ: Rhamnus catharticus, rhamnus Frangula and Purshiana.

LECTURE 12. *Nat. Ord.*—AMPILIDEÆ: Uva passa.

Nat. Ord.—SAPINDACEÆ: Guarana.

Nat. Ord.—ANACARDIACEÆ: Toxicodendron, rhus glabra, mastiche.

LECTURE 13. *Nat.Ord.*—LEGUMINOSÆ: Baptisia, scoparius, tragacantha, glycyrrhiza, physostigma.

LECTURE 14. Kino, santalum, chrysarobinum, balsamum tolutanum, balsamum peruvianum, hæmatoxylon, cassia fistula.

LECTURE 15. Senna (various kinds), tamarindus, copaiba, catechu, acacia.

LECTURE 16. *Nat. Ord.*—ROSACEÆ: Amygdala, prunus virginiana, quillaya, rubus Idæus et villosus, brayera, rosa canina et gallica, etc., cydonium.

LECTURE 17. *Nat. Ord.*—HAMAMELIDACEÆ: Hamamelis, styrax.

LECTURE 18. *Nat. Ord.*—MYRTACEÆ: Oleum cajeputi, eucalyptus, oleum myrciæ, caryophyllus, pimenta.

LECTURE 19. *Nat. Ord.*—CUCURBITACEÆ: Colocynthis, bryonia, megarrhiza, pepo.

Nat. Ord.—CACTACEÆ: Cactus grandiflora.

LECTURE 20. *Nat. Ord.*—UMBELLIFERÆ: Conium, anisum, carum, fœniculum, apium, petroselinum, coriandrum.

LECTURE 21. Sumbul, ammoniacum, galbanum.

Nat. Ord.—CORNACEÆ: Cornus.

Nat. Ord.—CAPRIFOLIACEÆ: Sambucus, viburnum.

LECTURE 22. *Nat. Ord.*—RUBIACEÆ: Ipecacuanha, coffea, cinchona.

LECTURE 23. Cinchona—continued.

LECTURE 24. *Nat. Ord.*—VALERIANACEÆ: Valeriana.

Nat. Ord.—COMPOSITÆ: Eupatorium, grindelia, erigeron, inula, anthemis, matricaria.

LECTURE 25. Pyrethrum, tanacetum, absinthium, santonica, arnica, calendula, lappa, taraxacum, lactucarium.

LECTURE 26. *Nat. Ord.*—LOBELIACEÆ: Lobelia.

Nat. Ord.—ERICACEÆ: Uva ursi, gaultheria, chimaphila.

LECTURE 27. *Nat. Ord.*—SAPOTACEÆ: Gutta percha.

Nat. Ord.—STYRACEÆ: Benzoinum.

Nat. Ord.—OLEACEÆ: Oleum olivæ, manna.

LECTURE 28. *Nat. Ord.*—APOCYNACEÆ: Apocynum, strophanthus.

Nat. Ord.—ASCLEPIADACEÆ: Asclepias.

Nat. Ord.—LOGANIACEÆ: Gelsemium.

LECTURE 29. Spigelia, nux vomica, ignatia.

Nat. Ord.—GENTIANACEÆ: Chirata, gentiana.

LECTURE 30. *Nat. Ord.*—HYDROPHYLLACEÆ: Yerba Santa.
Nat. Ord.—CONVOLVULACEÆ: Jalapa scammonium.

LECTURE 31. *Nat. Ord.*—SOLANACEÆ: Dulcamara, capsicum, belladonna, stramonium, hyoscyamus.

LECTURE 32. *Nat. Ord.*—SCROPHULARIACEÆ: Tabacum, digitalis, leptandra.

LECTURE 33. *Nat. Ord.*—LABIATÆ: Lavandula, mentha, origanum, thymus, hedeoma, melissa, salvia, rosmarinus, scutellaria, marrubium.

LECTURE 34. *Nat. Ord.*—CHENOPODIACEÆ: Chenopodium.
Nat. Ord.—PHYTOLACCACEÆ: Phytolaccæ bacca and radix.

LECTURE 35. *Nat. Ord.*—POLYGONACEÆ: Rheum, rumex.
Nat. Ord.—ARISTOLOCHIACEÆ: Serpentaria.

LECTURE 36. *Nat. Ord.*—PIPERACEÆ: Cubeba, matico, piper.
Nat. Ord.—MYRISTICACEÆ: Myristica.

LECTURE 37. *Nat. Ord.*—LAURACEÆ: Cortex cinamomi, camphora, cassia, coto and paracoto, sassafras.

LECTURE 38. *Nat. Ord.*—THYMELACEÆ: Mezereum.
Nat. Ord.—SANTALACEÆ: Oleum santali.

LECTURE 39. *Nat. Ord.*—EUPHORBIACEÆ: Cascarilla, oleum tiglii, kamala, oleum ricini, stillingia.

LECTURE 40. *Nat. Ord.*—URTICACEÆ: Ulmus, humulus, cannabis, ficus.
Nat. Ord.—JUGLANDACEÆ: Juglans.

LECTURE 41. *Nat. Ord.*—CUPULIFERÆ: Quercus, galla, castanea.
Nat. Ord.—SALICACEÆ: Salicinum, salix.

LECTURE 42. *Nat. Ord.*—CONIFERÆ: Thuja, juniperus, sabina, turpentines, pitches, resina, creasotum, oleum succini.
Nat. Ord.—IRIDACEÆ: Iris, crocus.

LECTURE 43. *Nat. Ord.*—ORCHIDEÆ: Vanilla, cypripediuin.
Nat. Ord.—SCITAMINEÆ: Cardamomum, zingiber.

LECTURE 44. *Nat Ord.*—SMILACEÆ: Sarsaparilla, Aloe, allium, scilla, convallaria, colchicum, veratrum.

LECTURE 45. *Nat. Ord.*—PALMÆ: Areca.

Nat. Ord.—AROIDEÆ: Calamus.

Nat. Ord.—GRAMINACEÆ: Amylum, maltum, saccharum, triticum, stigmata maidis.

LECTURE 46. LYCOPODIACEÆ: Lycopodium. Filices, Aspidium. Algæ, chondrus, fucus. Lichenes: cetraria. Fungi: Ergota, ustilago.

ANIMAL DRUGS.

LECTURE 47. Class Insecta: Cantharis, cera alba and flava, mel, coccus. Class Pisces: Ichthyocolla, oleum morrhuæ.

LECTURE 48. Class Aves, Ovum. Class Mammalia: Moschus, castoreum, fel bovis, sevum, saccharum lactis, carbo animalis.

LECTURE 49. Cetaceum, adeps, glycerinum, lanolinum.

LECTURE 50. Pepsinum, pancreatinum.

SYLLABUS OF TWENTY-FIVE LECTURES, SENIOR MATERIA MEDICA.

BY PROFESSOR W. M. SEARBY.

LECTURE 1. *Roots*—Sarsaparilla, senega, gentiana, taraxacum, chicory.

LECTURE 2. Pyrethrum, inula, lappa, apocynum, stillingia, petroselinum, sumbul, asclepias, phytolacca, althea, belladonna.

LECTURE 3. Begonia, calumba, rheum, glycyrrhiza, hydrangea, ipecacuanha, gelsemium, pareira, krameria.

LECTURE 4. *Rhizomes*—Aspidium, zingiber, galanga, curcuma, calamus, veratrum, dracontium.

LECTURE 5. Iris versicolor, cypripedium, sanguinaria, geranium, podophyllum.

LECTURE 6. Valeriana, arnica, serpentaria, spigelia, hydrastis, caulophyllum, cimicifuga, leptandra.

LECTURE 7. Menispermium, berberis. *Tubers and Bulbs*—Jalapa, aconitum, colchicum, scilla.

LECTURE 8. *Woods*—Quassia, hæmatoxylon, santalum, cinchona.

LECTURE 9. Cinchona (continued), magnolia, prunus virginiana, viburnum.

LECTURE 10. Berberis, quercus, granatum, frangula, cascara sagrada.

LECTURE 11. Sassafras, cinnamomum, ulmus, quillaya, euonymus, juglans, xanthoxylum, mezereum, gossypium, cascarilla.

LECTURE 12. *Herbs*—Chondrus, cetraria, pulsatilla, scoparius, eupatorium, grindelia, lobelia, mentha.

LECTURE 13. Absinthium, tanacetum, origanum, thymus, hedeoma, cataria, marrubium, chirata, cannabis.

LECTURE 14. *Leafy Tops*—Sabina, thuja, santonica. *Flowers and Petals*—Caryophyllus, brayera, rosa, matricaria anthemis, arnica, calendula, levandula, sambucus, brayera.

LECTURE 15. *Leaves and Leaflets*—Pilocarpus, eucalyptus, uva ursi, senna, buchu, erythroxylon.

LECTURE 16. Belladonna, stramonium, hyoscyamus, digitalis, matico, salvia, hamamelis, chimaphila, gaultheria, conium.

LECTURE 17. *Fruits*—Lupulus, piper, pimenta, cocculus, capsicum, colocynth, cassia fistula.

LECTURE 18. Xanthoxylum, illicum, cardamomum, coriandrum, conium, anisum, petroselinum, apium, carum, foeniculum.

LECTURE 20. *Seeds*—Physostigma, dipteryx, theobroma, cola, sinapis.

LECTURE 21. Nux vomica, ignatia, staphisagria, myristica, stramonium, colchicum.

LECTURE 22. *Extracts and Inspissated Juices*—Guarana, opium.

LECTURE 23. Lactucarium, aloe, catechu, kino, gutta percha, elastica. *Sugars*—Saccharum, tactis, manna, mel.

LECTURE 24. *Gums, Gum-Resins, Resins, Oleo-Resins and Balsams*—Acacia, tragacantha, gambogia, asafœtida, galbanum, ammoniacum, olibanum, myrrha scammonium, mastiche.

LECTURE 25. Guaiaci resina, benzonium, balsamum, peruvianum, balsamum, toltanum, styrax, copaiba, terebinthina, pix burgundica, pix canadensis, pix liguida.

LECTURE 26. *Unclassified*—Camphor, thymol, oleum morrhuæ, oleum tiglii, oleum ricini, oleum theobromæ, cetaceum, cera, amylum, lycopodium, kamala, ergota, galla.

BOTANY.

Syllabus of 25 Junior Lectures.

BY PROF. H. BEHR.

1. Discussion, explanation, and demonstration of floral parts.
2. Classes of Linnean system.
3. Subdivision of Linnean system.
4. Practical exercises in determining the classes.
5. Structure of stamens and their combinations.
6. Structure of ovary.
7. Development of ovary into the different forms of fruit.
8. Dehiscent varieties of fruit.
9. Indehiscent varieties of fruit.
10. Seeds, their position and their structure.
11. Corolla.
12. Calyx.
13. Perianth and subsidiary organs.
14. Inflorescence.
15. Position of leaves and their simple forms.
16. Outline of simple leaves.
17. Compound leaves.

18. Vernation and æstivation.

19. Stem.

20. Root.

21. Practical exercises in determining foliaceous organs and identifying plants according to the Linnean method.

22. Practical exercises in regard to inflorescence and identifying plants.

23. Practical exercises in regard of autumnal forms of fruit, etc.

24. Practical exercises in regard to floral organs and identification of plants.

25. Practical exercises in describing plants from specimens —as much as possible officinal plants chosen.

BOTANY.

Syllabus of 25 Senior Lectures.

BY PROF. H. BEHR.

LECTURE 1. Difference between Vascular and Cellular plants.

LECTURE 2. Algæ and Fungi—lower forms of fungi.

LECTURE 3. Fungi—Basidiomycetes and ascomycetes.

LECTURE 4. Mosses.

LECTURE 5. Vascular cryptogams (identification of a fern).

LECTURE 6. Gymnosperms and their evolution out of the vascular cryptogams.

LECTURE 7. Classification of flowering plants (phœnerogamæ.

LECTURE 8. Gymnospermæ.

LECTURE 9. Monocotyledoneæ—Identification of a plant.

LECTURE 10. Monocotyledoneæ, epigynæ and coronariæ.

LECTURE 11. Monocotyledoneæ, nudifloræ and glumales.

LECTURE 12. Dicotyledoneæ apetalæ.

LECTURE 13. Apetalæ with superior ovary.

LECTURE 14. Apetalæ with inferior ovary.

LECTURE 15. Gamopetalæ—Outlines of classification.

LECTURE 16. Gamopetalæ—Irregular flowers.

LECTURE 17. Gamopetalæ—Superior ovary and regular flowers.

LECTURE 18. Gamopetalæ—Inferior ovary.

LECTURE 19. Calycifloræ discussing umbelliferæ, ficoidales and passiflorales.

LECTURE 20. Calycifloræ discussing myrtaceæ, rosaceæ, crossulaceæ and leguminosæ.

LECTURE 21. Disciflorae.

LECTURE 22. Malvaceæ, guttiferæ, caryophyllaceæ, polygalaceæ.

LECTURE 23. Papaveraceæ, cruciferæ and other parietales.

LECTURE 24. Ranunculaceæ.

LECTURE 25. Practical exercises by identifying native plants, as much as possible such of pharmaceutical interest.

As it is impossible to exhaust the material in twenty-five lectures, it will be necessary to reserve a few more lectures for a more minute study of important families, as Umbelliferæ, Solanaceæ, etc.

SYLLABUS OF 25 LECTURES FOR JUNIOR PHARMACY.

BY PROF. F. A. GRAGER.

It will be the aim in these lectures to introduce as much practical matter as possible which may be required in the retail store; such subjects as require practical work on the part of the student in addition to the lectures, will be carried out in the Pharmaceutical Laboratory.

1. The lecture course begins with a brief outline of the history of Pharmacy, consideration of text-books, journals and works of reference.

2. Metrology—Definition and consideration of weight, apparatus and methods of weighing, the different systems of weights and measures in use.

3. Specific Gravity—Specific volume, the various apparatus for taking specific gravity, together with their methods.

4. Comminution—Grinding and powdering drugs, by means

of the various apparatus in general use, drug sifting, with considerations regarding the fineness of powders.

5. Heat—Source and management, apparatus for generating heat.

6. Measurement of Temperature, Thermometry—The use of thermometers in pharmacy and medicine, the different scales and their conversion, method of preparing thermometers.

7. Evaporation—Spontaneous, rapid, in vacuo, by means of steam, sand, water, and oil baths.

8. Distillation and its uses, the various methods, together with apparatus required.

9 Fusion—Sublimation, calcination, granulation.

10. Oxidation—Reduction and ignition, their application in pharmacy.

11. Solution—Chemical and Pharmaceutical. Crystallization, deliquescence, efflorescence, decantation, elutriation.

12. Filtration—Filtering material, its uses and the various methods of filtration employed.

13. Maceration—Expression, infusion, decoction, digestion.

14. Percolation—Officinal process, together with the various other methods in use.

15. The store, its practical arrangement, the prescription counter, care of show cases, shelf bottles, wrapping and folding of packages, labels and labeling.

16. Bleaching and preparing sponges for surgical and commercial use.

17. Prescription writing and reading.

18. Notes on dispensing, incompatibilities.

19. Urine analysis.

20 to 25. Operative Pharmacy—The remainder of the course being taken up with the consideration of the minor pharmaceutical preparations.

SYLLABUS OF 50 LECTURES FOR SENIOR PHARMACY.

BY PROF. F. A. GRAGER.

These lectures will begin by a brief review of the work in the Junior Year, after which all of the pharmacopœial preparations will be considered—according to their arrangement in the following syllabus.

LECTURE I. Aqueous Solutions—Aquæ, Waters: (1) Simple solution, (2) by passing gases through water, (3) percolation through medicated cotton, (4) distillation.

LECTURE II. Liquores Solutions: (1) Simple solutions, (2) chemical solutions, (3) solution in chloroform.

LECTURE III. Aqueous Solutions containing sweet or viscid substances: (1) Sirup or simple sirup, (2) medicated sirup, (3) flavored sirup and their method of preparation.

LECTURE IV. Mellita—Honeys. (1) Commercial, (2) clarified, (3) medicated.

LECTURE V. Mucilagines—Mucilages. (1) Without heat, (2) with heat.

LECTURE VI. Misturæ—Mixtures.

LECTURE VII. Glycerinum—Glycerin, method of preparation. (1) Glyceritæ, Glycerites.

LECTURE VIII. Alcoholic Solutions—Spiritus, Spirits. (1) Simple solutions, (2) with maceration, (3) by gaseous solution, (4) by chemical reaction, (5) by distillation.

LECTURE IX. Elixiria—Elixirs. (1) Pharmacopœial, (2) non-officinal.

LECTURE X. Ethereal Solutions—Collodia: Collodions, Cellulose. Nitrated substitution compound of cellulose.

LECTURE XI. Oleaginous Solutions or External Applications, Linimenta—Liniments. (1) Base: cotton seed oil, (2) base: alcohol, (3) base: oil of turpentine.

LECTURE XII. Oleata—Oleates. Oleic acid.

LECTURE XIII. Aqueous Liquids made by Percolation or Maceration—Infusions: (1) By maceration, (2) digestion, (3) percolation.

LECTURE XIV. Decoctions and Methods.

LECTURE XV. Alcoholic Liquids made by Percolation or Maceration, Compound Tinctures.

LECTURE XVI. Simple Tinctures.

LECTURE XVII. Tincture Herbarum Recentium—Tincture of Recent Plants.

LECTURE XVIII. Vina Medicata—Medicated Wines: (1) Not medicated, (2) by solution, (3) by maceration, (4) by percolation.

LECTURE XIX. Extracta Fluida—Fluid Extracts: (1) Percolation with partial evaporation (officinal), (2) percolation with incomplete exhaustion, (3) repercolation (Squibb), (4) maceration with hydraulic pressure (Parke, Davis & Co.), vacuum maceration with percolation.

LECTURE XX. Extracta Fluida (*continued*). Officinal preparations.

LECTURE XXI. Etherial Liquids made by Percolation, Oleoresinæ, Oleoresins.

LECTURE XXII. Acetous Liquids made by Percolation, Aceta, Vinegars.

SOLIDS.

LECTURE XXIII. Solid Preparations made by Percolation or Maceration. Extracta—Extracts. Officinal preparations.

LECTURE XXIV. Abstracta—Abstracts.

LECTURE XXV. Resinæ—Resins.

LECTURE XXVI. Solid Preparations made without Percolation or Maceration. Pulveres—Powders.

LECTURE XXVII. Triturationes—Triturations. Massæ—Masses.

LECTURE XXVIII. Confectiones—Confections. Pilulæ—Pills. The various excipients used, methods of preparing pills, capsules, etc.

LECTURE XXIX. Pilulæ—Pills. Officinal preparations.

LECTURE XXX. Trochisci—Troches. Officinal preparations.

LECTURE XXXI. Solid Preparations for External Use—Cerata Cerates.

LECTURE XXXII. Unguenta—Ointments: (1) Officinal

ointments by fusion, (2) officinal ointments by incorporation, (3) officinal ointments by chemical reaction.

LECTURE XXXIII. Emplastra, Plasters. (1) Basis, gum resin, (2) basis, lead or resin plaster, (3) basis, burgundy or Canada pitch, (4) officinal spread plasters. Charta—Papers.

LECTURE XXXIV. Suppositora—Suppositories. The various methods of preparation.

LECTURE XXXV. Preparations of the Inorganic Materia Medica,—hydrogen, oxygen and water.

LECTURE XXXVI. The Inorganic Acids. Preparation of hydrochloric, hydrobromic, nitric, sulphuric, sulphurous, and phosphoric acids together with their dilutions.

LECTURE XXXVII. Officinal salts of the halogens, chlorine, bromine and iodine.

LECTURE XXXVIII. Officinal salts of sulphur and phosphorus.

LECTURE XXXIX. Carbon, boron, silicon, carbo animalis, carbo animalis purificatus, bone black, purified animal charcoal, boron, acid boricum, boric acid, silicon, silica, liquor sodiis silicatis, soluble glass.

LECTURE XL. The Alkalies and Their Compounds,—potassium, sodium, lithium and ammonium, the officinal potassium salts, the sodium salts.

LECTURE XLI. The officinal lithium salts, the officinal ammonium salts.

LECTURE XLII. Officinal salts of magnesium, calcium and barium.

LECTURE XLIII. Officinal salts of manganese, iron and chromium.

LECTURE XLIV. Officinal salts and preparations of antimony, arsenic and bismuth.

LECTURE XLV TO L. Officinal salts and preparations of lead, copper, silvery and mercury.

The balance of the course such preparations or substances will be considered of the Organic Materia Medica as come within the province of this chair.

SYLLABUS OF 25 LECTURES FOR VEGETABLE HISTOLOGY AND MICROSCOPY.

BY PROF. J. J. B. ARGENTI.

LECTURE I.—Introduction, magnification, lenses, use of lenses as magnifiers.

LECTURE II.—The simple microscope, correction of lenses. The compound microscope, its construction, parts and use.

LECTURE III.—The eye piece. The objective.

LECTURE IV.—The various accessories employed with the compound microscope.

LECTURES V TO X.—The preparation of material for section cutting, staining materials, staining sections, mounting and finishing, temporary and permanent mounts.

LECTURE XI.—On drawing and photo-micrography.

LECTURE XII.—Vegetable Histology, the vegetable cell and its contents.

LECTURE XIII.—The cell wall, structure, markings and modifications.

LECTURES XIV, XV.—Contents of cells, plastids, protein grains, starch, inulin, crystals, etc.

LECTURE XVI.—Cell formation, various processes.

LECTURE XVII.—Modification of cells.

LECTURE XVIII.—Cells of fundamental system.

LECTURES XIX, XX.—Cells of fibrovascular system.

LECTURE XXI.—Sieve and latex system.

LECTURES XXII TO XXV.—Construction of fibro-vascular bundles. Histology of root, stem, leaf and seed.

SYLLABUS FOR VEGETABLE HISTOLOGY AND MICROSCOPY, 25 SENIOR LECTURES FOR 1893.

BY PROF. J. J. B. ARGENTI.

LECTURES I, TO III.—*Roots, Rootlets.* Sarsaparilla (varieties) senega, gentiana, taraxacum, cichorium, pyrethreum, stillingia, phytolacca, althæa, belladonna, bryonia, calumba, rheum.

LECTURES IV TO VI.—*Rhizomes and Rootlets.* Aspidium, zingiber (varieties), calamus, veratrum, iris versicolor, cypripedium, sanguinaria, geranium, caulophyllum, cimicifuga, leptandra, menispermum.

LECTURE VII, VIII.—Podophyllum, valeriana, arnica, spigelia, serpentaria, hydrastis, asarum, berberis.

LECTURE IX AND X.—*Tubers, Bulbs, Tuberous Roots.* Jalapa, aconitum, scilla, colchicum, woods, twigs, quassia, hæmatoxylon, guaiacum, dulcamara.

LECTURE XI TO XIII.—*Barks.* Cinchona, prunus virginiana, viburnum, quercus, frangula, cascara sagrada, quebracho, rubns, juglans, mezereum, gossypium, sassafras, cinnamomum, xanthoxylum.

LECTURE XIV TO XVII.—*Herbs, Flowers.* Caryophyllus, arnica, cannabis indica, lobelia, mentha piperita, mentha viridis, hedeoma, marrubium, grindelia, chondrus, atraria, calendula, matricaria, authemis, tanacetum, scoparius.

LECTURES XVIII TO XX.—*Leaves, Leaflets.* Pilocarpus, eucalyptus, ura ursi, senna (varieties), erythoxylon, bella, donna, stramonium, hyoscyamus, digitalis, matico, salvia-buchu (varieties), aconitum, conium.

LECTURE XXI, XXII.—*Fruits.* Juniperus, anisum, carum, foeniculum, coriandrum, illicium, capsicum, cubeba, colocynthis, cardamomum, conium, anethum, granatio cortex, vanilla.

LECTURES XXIII, XXIV.—*Seeds.* Nux vomica, ignatia, delphinium, staphisagria, sinapis (varieties), stramonium, hyoscyamus, lobelia, papaver, sabadilla, areca, physostigma, amygdalus, tiglium.

LECTURE XXV.—*Starches.* Lupulin, lycopodium, galla, kamala, sassafras, medulla, ergota.

SYLLABUS FOR A PRACTICL COURSE OF PHARMACEUTICAL LABORATORY INSTRUCTION.

BY PROF. F. T. GREEN.

Organizing class, assignment of desks, etc.

1. Laboratory Lesson—Weights and measures as applied to Pharmacy and The Prescription.

2. Powdering, elutriation, solution and filtration.

3. Aquæ—Distilled, aromatic, medicinal, with their preparations.

4. Liquors—The simple and chemical solution, including the making of reagents.

5. Salts—Precipitation, crystallization, granulation.

6. The extraction of the principles of drugs, percolation, maceration, the manufacture of tincture and fluid extracts.

7. Suffusions and decoctions.

8. Sirups.

9. Manipulation of Heat in Pharmacy—Drying, fusion, evaporation, distillation, sublimation.

10. Pills—Mixing, incorporating, coating and making them up.

11. Suppositories—Hand rolled, pressed and cast.

12. The Gases (Hydrogen, Chlorine, Oxygen, Nitrogen, Ammonia, Carbonic Acid)—Preparation, and identification.

13. The Acids (Hydro-chloric Acid, Nitric Acid, Sulphuric Acid, Hydro-fluoric Acid)—Their preparation and mode of handling.

14. The Blowpipe—Uses, forms, mode of using.

TEXT-BOOKS.—Practical and Analytical Chemistry—Henry Trimble. Remington's Pharmacy.

SYLLABUS

FOR LABORATORY COURSE OF ANALYTICAL CHEMISTRY—A SYSTEMATIC COURSE OF ANALYTICAL CHEMISTRY FOR PHARMACISTS.

BY PROF. F. T. GREEN.

Senior Course.

Organization of the class, apportionment of desks, apparatus, etc.

1. Manipulation of tubing, cork boring, filling, handling of apparatus.

2. The use of reagents, their application, filtration.

3. The manipulation of the analytical balance, and weights and measures practically applied.

4. Simple gravity estimation—solid and liquid—a series of lessons in qualitative analysis.

5–11. A series of lessons in qualitative Analysis:—

Class I. Silver, Lead, Mercury.

Class II. Lead, Mercury, Bismuth, Cadmium, Copper.

Class III. Arsenic, Antimony, Tin, Gold, Platinum.

Class IV. Iron, Aluminum, Chromium.

Class V. Zinc, Manganese, Cobalt, Nickel.

Class VI. Calcium, Barium, Strontium (Magnesium).

Class VII. Potassium, Godium, Ammonium.

12. Qualitative analysis of solutions for bases. Qualitative analysis of salts for bases.

13. Reactions of the acids of pharmaceutical importance. Qualitative examination of solutions for acids and identification.

14–15. The instruments of the chemist and their practical

application to analytical chemistry—polaristrobometer, spectroscope, microscope.

16–18. Geometric Quantitative Work—Thrimble.

19–20. Volumetric analysis on U. S. P., alkalies, acids and salts.

21–23. Urinalysis—Qualitative, quantitative, microscopic.

24. Practical toxicology, or the identification and detection of poisons.

TEXT-BOOKS—Qualitative Chemical Analysis—Eliot & Storer. Practical and Analytical Chemistry—Trimble.

GRADUATING CLASS—1892.

Airaldi, August
Bagot, Edward Albert
Cogswell, Frederick
Crowley, Thomas Joseph
Cavagnaro, Augustine Angelo
Des Marais, La Fayette Ney
Edwards, William
Fox, Jay Ernest
Gienger, Charles John
Hawkes, Robert Hamilton
Hanson, George Franklin, M. D.
Heinzeman, Edward Anthony
Hund, George Bernard
Inman, Thomas George
Johns, Thomas Edwin
Janeck, Frederick Lau
Kellogg, Wilfred Harvey
Lann, William Henry
Nightingale, Joseph Benjamin
Painter, George Louis
Polk, Charles William
Pooler, Chester Bennett
Potter, Grace Mabel
Preuss, John
Peck, Samuel Stodole, B. S.
Rees, David Richard
Roche, Thomas Bryan
Ryan, Peter Aloysius
Skinner, John Bryant
Stock, William Sampson, B. A.
Sharp, Solomon Albert
Villain, Albert John
Wechsler, Paul

CERTIFICATE OF PROFICIENCY.

Cooper, Grace Goodhue
Puck, Richard Frederick
Stone, Bertha Irene
Waller, Samuel Leroy

PRIZES—1892.

First Prize—College Gold Medal,
J. Preuss.

Second Prize—Microscope, Donated by C. C. Riedy,
T. E. Johns.

Alumni Prize for Practical Work—Gold Pin and Framed Certificate.
Grace M. Potter.

Junior Prize—Lecture Tickets to the Senior Course, by the College,
M. Lichtenstein.

JUNIORS—CLASS OF 1892.

Atwood, George Clouston.....460 12th St., Oakland, Cal.
Ayers, Walter Wadsworth.....227 Leavenworth St., S. F., Cal.
Anderson, Charles Emil.....1812½ Geary St., S. F., Cal.
Bare, Edward Robert Lee.....cor. Sutter and Powell Sts., S. F., Cal.
Blum, Joseph Henry.....914 Ellis St., S. F., Cal.
Bagley, Hubert Francis.....17 Fulton St., S. F., Cal.
Brannagan, Arthur Joseph.....Mulberry, San Benito Co., Cal.
Bowerman, Kenneth Burton.....Monrovia, Los Angeles Co., Cal.

Chapman, Clarence Arthur.....Watsonville, Santa Cruz Co., Cal.
Campbell, John Blythe.....Selma, Fresno Co., Cal.
Carroll, John Richard 1520 Van Ness Ave, S. F., Cal.
Dowdall, Richard John.....324 18th St., S. F., Cal.
Donnelly, Frank Joseph.....1610 Post St., S. F., Cal.
Dufficy, George Woodward San Rafael, Cal.
De Mersanne, Francis Ernest.....Eureka, Humboldt Co., Cal.
De Urunuela, Nicolas Roberto.....400 Hayes St., S. F., Cal.
Folkers, Oscar Herman Ernest.....423 Golden Gate Ave., S. F., Cal.
Fletcher, George Thomas..... 2008 Jackson St., S. F., Cal.
Fuller, Charles Francis.....2300 Filmore St., S. F., Cal.
Fuller, Ethel Viola (Mrs.).....2300 Filmore St. S. F., Cal.
Faulkner, Charles William.....cor 5th and Mission Sts., S. F., Cal.
Grace, William Emory..... Burns, Oregon.
Green, George Anthony.....19 Georgia St., S. F., Cal.
Hirst, Charles Porter.....517 Hayes St., S. F., Cal.
Hines, W. B.....
Hedrick, Walter Marshall 513 Taylor St., S. F., Cal.
Hornung, Eugene Bernard.....30 Fair Oak St., S. F., Cal.
Holladay, Fred Short 2308 Encinal Ave., Alameda, Cal.
Irelan, Oscar Burgess.....827 Post St., S. F., Cal.
Johnson, William Peter.....Los Gatos, Cal.
Lawrence, Howard Chester.....1006 Jones St., S. F., Cal.
Lichtenstein, Max.....1604 Howard St., S. F., Cal.
McNamara, John Alexander.....1505 Golden Gate Ave., S. F., Cal.
McKenny, William Belknap Olympia, Wash.
McKenny, Samuel Miller.....Olympia, Wash.
McMillan, Daniel Newcomb... 111 7th St., S. F., Cal.
Morris, Charles Alfred 2608½ Bush St., S. F., Cal.
Morse, William Henry.....San Mateo, Cal.
Mendel, Louis Carl..... 1507 Steiner St., S. F., Cal.
Macken, Lawrence.....Golden West Hotel, S. F., Cal.
O'Donnell, George Washington ...704 Washington St., S. F., Cal.
Ormiston, Archie McGregor.....Lakeport, Lake Co., Cal.
Olcese, Cæsar Columbus.....Oakland, Cal.
Ross, George Ichabod.....1516 Clay St., S. F., Cal.
Spiro, Harry.....cor Taylor and Eddy Sts., S. F., Cal.
Scamell, Joseph William.....2218 Pine St., S. F., Cal.
Scherb, Louis Henry.....237 Hancock St., Los Angeles, Cal.
Stuart, Stanley Maccandless 943 Valencia St., S. F., Cal.
Scholl, Otto 400 Ellis St., S. F., Cal.
Schubert, Charles Christopher.....Berkeley, Cal.
Tobriner, Isaac Oakland, Cal.
Upp, William Augustus.....1323 Clay St., S. F., Cal.
Vonder Leith, Harold Otto.....742 Broadway St., S. F., Cal.
Vogel, Rudolph Fred Los Angeles, Cal.
Whiting, Eugene Carlysle Berkeley, Cal.

Wise, Matthew Sylvester. 300 6th St., S. F , Cal.
Wilson, Frank Holtzclaw.....cor Mont. Ave and Pacific, S. F., Cal.
Watson, William Davis 726 Shotwell St., S. F., Cal.
Zeile, George David.....818 Lombard St., S. F., Cal.

SENIORS—CLASS OF 1892.

Airaldi, August 247 Seventh St., S. F., Cal.
Bagot, Edward Albert.....22 Liberty St., S. F., Cal.
Besby, Joseph Arthur William.....313 Grove St., S. F., Cal.
Cogswell, Frederick..... Auburn, Cal.
Crowley, Thomas Joseph..... 603 Merchant St., S. F., Cal.
Cavanaro, Augustine Angelo.....1011 Jackson St., S. F., Cal.
Cauch, John Robert.....San Bernardino.
Cooper, Grace Goodhue..... 825 Pine St., S. F., Cal.
Drossel, Joseph Henry.....1000 Jackson St., S. F., Cal.
Des Marais, La Fayette Ney.....1154 E. 14th St., Oakland, Cal.
Edwards, William..... Baldwin Pharmacy, S. F., Cal.
Fox, Jay Ernest.....1366 Ninth St., Oakland, Cal.
Gienger, Charles John.....700 Washington St., S. F., Cal.
Goto, Seinoske 1163 Mission St., S. F., Cal.
Hawkes, Robert Hamilton.....812 Myrtle St., Oakland, Cal.
Horswell, Franklin Horace.....1218 Chestnut St., Oakland, Cal.
Hanson, George Franklin, M. D...761 Valencia St., S. F., Cal.
Hund, George Bernard.....622 Broderick St., S. F., Cal.
Hall, Charles Edward cor. Noe and Market Sts., S. F., Cal.
Heinzeman, Edward Anthony Los Angeles, Cal.
Inman, Thomas George.....cor 20th and Mission Sts., S. F., Cal.
Johns, Thomas Edwin.....Los Gatos, Cal.
Janeck, Frederick Lan.... North Yakima, Wash.
Kimball, William S 1002 Market St., S. F.
Kellogg, Wilfred Harvey..... ...1149 E. 14th St., Oakland, Cal.
Lann, William Henry 1506 Mission St., S. F., Cal.
Nightingale, Joseph Benjamin 300 Haight St., S. F., Cal.
Painter, George Louis.....1128 Market St., S. F., Cal.
Puck, Richard Frederick.....2501 Sutter St., S. F., Cal.
Polk, Charles William Watsonville, Cal.
Pooler, Chester Bennett.....Santa Rosa, Cal.
Potter, Grace Mabel 3700 California St., S. F., Cal.
Preuss, John.....Marshfield, Ore.
Peck, Samuel Stodole, S. B 432 Post St., S. F., Cal.
Rees, David Richard.. Livermore, Alameda Co., Cal.
Roche, Thomas Bryan.. 16 Pearl St., S. F., Cal.
Ryan, Peter Aloysins.....627 3d St., S. F., Cal.
Stock, William Sampson, A. B.....Portland, Oregon.
Stone, Bertha Irene cor. Jackson and Polk Sts., S. F., Cal.

Sharp, Solomon Albert.. 1845 Polk St., S. F., Cal.
Skinner, John Bryant.....Sonoma, Cal.
Unger, Alfred.....24 Parker Avenue, S. F., Cal.
Villain, Albert John.....1406 Mason St., S. F., Cal.
Waller, Samuel Leroy.....cor. Geary and Grant Ave., S. F., Cal.
Wechsler, Paul 626 California St., S. F., Cal.

GRADUATES.

Name.	Date of Graduation.	Thesis.
Adair, William H.	1881	Extract of malt
Aitken, Louis S.	1890	
Argenti, J. J. B.	1881	The olive and its product
Bacon, Gaston E.	1875	Analysis of tincture of opium
Ball, Henry A.	1884	Analysis of Wilhoit mineral water
Ball, Robert L.	1882	Bitter bark from San Salvador
Barbat, Josephine E.	1884	Apium graveolens
Barbat, J. H.	1880	Taraxacum leaves and root
Barrington, Charles L.	1882	Vitus vinifera
†Bauer, Fred C.	1877	Analysis of well water
Beaizley, George T.	1885	Abrus precatorius
Beck, Henry M.	1889	Tasteless Fl. Ext. Cascara Sagrada
Beckett, F. Arthur	1883	Hydrobromic acid
Bernheim, Moses Ralph	1891	
Besthorn, H. E. D.	1884	Alpinia officinarum
Bilger, Frank W.	1889	Eucalyptus
Bodkin, Thomas P.	1887	An examination of the American zinc salts
Bond, Frederick T.	1886	Analysis of bitartrate of p tassium
Borchers, Adolph W.	1889	Ung. Hyd. Nit.
Boswell, Frank M.	1886	Acidum boricum
Bowen, Charles P.	1889	Cera alba and cera flava
Bratton, Fred O.	1886	Antipyrin
Burnett, G. G.	1879	Rhamnus Purshiana
Bussenius, Adolph G.	1888	Emplastrum plumbi
Calegaris, Joseph	1885	Punica granatum
Callender, Ernest Glen	1891	
Chard, George R.	1881	Iodoform
Chilson, Henry Goodwin	1891	
Cleary, Stephen	1890	
Cody, Nelson A.	1881	Croton procumbens
Collin, Francis Jesse	1891	
Cox, Levitt H.	1889	Gonania Domingensis
Cerf, Joseph Leon	1891	
Crew, Henry W.	1887	Thea Sinensis
Curragh, John M.	1887	Damiana
D'Artenay, Eugene	1882	Berberis Aquifolium
Davis, Thomas Hancock	1891	

Name.	Date of Graduation.	Thesis.
Davis, William J.	1885	Artemisia abrotanum
Delicat, John F. A	1888	Assay of creosote and two fluid extracts
Devine, John	1877	Analysis of seidlitz powder
De Witt, James M	1881	Pharmaceutical ethics
Dick, William H	1884	Chamæcyparis Lawsoniana
Dignan, Michael H	1883	Analysis of a sulphuretted mineral water
Donaldson, John Glassen	1891	
Dorrance, Ralph G	1885	Rhamnus Purshiana
Driscoll, Edward P	1888	Eupatorium perfoliatum
Driscoll, Frederick A	1887	An examination of commercial Rochelle salt
Driscoll, Frank Ignatius	1891	
Drossel, August A	1886	Chlorophyll
Dubois, Paul A	1880	Grindelia robusta
Elwert, Charles P	1881	Gelsemium sempervirens
Emerson, Horatio B	1888	Aspidiums of California
Fevrier, J. P	1881	Jaborandi
Fitzell, Charles R	1883	Humulus lupulus
Fitzell, Lincoln	1889	Yerba buena
Fletcher, David M	1881	Assays of Cinchona bark
Flint, George E	1888	Estimation of Phenol in disinfectants
Fox, Albert S	1889	Peppermint and its oil
Gardner, Frank Avery	1891	
Gates, Emery P	1887	Peucedanum dasycarpum
Gerdes, Henry G	1889	Eschscholtzia Californica
Gibson, Martin R	1891	
Gilbride, Philip Joseph	1891	
Gove, D. M	1881	A well-arranged pharmacy
Graham, Thomas D	1875	Oxytropis campestris
Grazer, F. A	1880	Berberis aquifolium
Green, Franklin T	1882	Analysis of well water
Green John A	1883	Melaleuca hypericifolium
Grossman, Edward L	1891	
Harris, Louis	1891	
Hance, Bowen Forrest	1891	
Hall, Benjamin F	1889	Sp. æther. nit.
Haman, Henry	1887	Hoang Nan
Hammit, Charles H	1881	Analysis of Piedmont Spring water
Happersberger, Emil	1882	Cinchona culture in California
Harman, Paul T	1885	Assay of citrate of iron and quinia
Harris, Henry R	1876	Hydrocyanic acid
Harvey, George J	1889	Sp. æther. nit.
‡Heaney, J. P	1874	Oreodaphne Californica
Heider, Frank B	1889	Syr. Ferri Iodidi
Helke, W. S	1878	Erythroxylon coca
Henderson, David L	1888	Preparation of pepsin
Higgins, Charles C	1888	Impurities in officinal salts of Iron

Name.	Date of Graduation.	Thesis.
Hoover, Ulysses G	1890	
Hueter, Gustave A	1890	
Hughes, Samuel F	1886	Solanum umbelliferum
Hughes, Thomas H	1886	Prunus ilicifolia
Hulting, B. F	1880	Arctostaphylos glauca
Hurtzig, W. F. N	1881	Chloroform
Ing, John C., Jr	1887	Galipea cusparia
†Jones, Morgan L	1883	Agave Americana
Joy, Edwin W	1878	Fluid extracts by repercolation
Judson, Russell H	1882	Carica papaya
Kahn, Adolph J	1875	Pharmaceutical education
Keefe, John J	1890	
Kelsey, Harry D	1888	Commercial vinegar
Kelsey, John Edson	1891	
King, William H. V	1891	
Korper, Harry W	1883	Boldoa fragrans
Krause, Frederick L	1884	Aqua Menthæ piperitæ
Ladd, Henry	1891	
Leber, Albert L	1884	Euphorbia ocellata
Leet, Robert Andrew	1891	
Legge, Robert Thomas	1891	
Leithold, John V	1890	
Lengfeld, Felix	1880	Assays of opium
Levison, Charles G	1884	Euphorbia pilulifera
Lezynsky, Samuel	1880	Peptone
Lindsay, Frederick G	1883	Schinos molle
Link, Victor A	1890	
Loehr, George W	1884	Qualitative and quantitative tests of drugs
Logan, Milburn H., M. D	1887	The quality of commercial cream of tartar
Lustig, Daniel David	1881	Heteromeles arbutifolia
Lovotti, Frederico	1891	
Maloney, James J	1888	Fabiana imbricata
Mardis, Benjamin A	1890	
Mathewson, J. McL	1879	Mitchella repens
Mayer, Oscar J	1885	Dirca occidentalis
McCarthy, James H	1888	Manufacture and impurities of sulphuric acid
McDonnell, S. A	1878	Dialysed iron
† McLean, F. P	1875	Analysis of magnesites
McLaughlin, W. H	1878	Eriodictyon Glutinosum
McMurdo, John R	1887	Volumetric assay of commercial acetic acid
Medros, Joseph J	1890	
Mervy, Emil C	1879	Lupinus chamissonis
Messing, L. J	1879	Eucalyptus globulus

Name.	Date of Graduation.	Thesis.
Meyer, August W	1885	Spacele calcina
Meyers, Robert C	1875	Sesame oil and its uses
Minor, George W	1879	Larrea Mexicana
Mohun, Charles C	1887	Albuminate of iron
Molony, Edward J	1886	Ferri oxidum saccharatum solubile
Moore, Berkeley W	1883	Pyrethrum cinerariæfolium
Moore, C. C	1878	Analysis of soil
Morgan, Charles L	1886	Tincture of nux vomica
Morgan, Henry F	1889	Glycerine suppositories
Morrison, W. P	1880	Table of solubilities
Munson, James G	1884	Volumetric tests of arsenical preparations
†Murphy, Martin J	1881	Amygdalus communis
Newman, Felix Harry	1891	
Newby, Thomas S	1884	Chenopodium Californicum
Nicholas, Horace S	1887	Cimicifuga racemosa
Oberdeener, George	1884	Rumex hymenosepalus
Oberdeener, Samuel	1880	Pharmaceutical notes
O'Grady, James Joseph	1891	
O'Neil, Ambrose E	1889	Ipecac and its fluid extract
Olds, George Lincoln	1891	
Orena, Arthur G	1887	Caucalis microcarpa
Parker, E. S	1878	Aspidium argutum
Patton, William J	1885	Analysis of Harden & Lewis' fire grenades
Patterson, Frank F	1891	
Perkins, Philip J	1888	Morphine strength of tincture opium
Petrie, Frank B	1888	Bicarbonate of soda
Prien, Harry F	1885	Oleum theobromæ
Prosser, Sanford Stephen	1891	
Ralston, Frank W	1888	Estimation of cantharidine in powdered cantharides
Ray, Fred E	1876	California opium
Reilly, Eugene C	1885	The production of the oil of eucalyptus in California
Reilly, Paul H	1883	Tannic acid
Rimpau, Frank T	1883	An assay of ore
Rogers, Nathan	1876	Sium latifolium
Root, George A	1888	Estimation of caffeine in guarana and its preparations
Roturier, Emile	1883	Piperidine
Rowe, Frederick W	1890	
Sanborn, William M	1888	Peucedanum Leiocarpum
Samuels, Edward H	1891	
Schmelz, Charles J	1885	Audibertia grandiflora
Schmidt, Edwin V	1890	
Scholl, A. L	1881	Zygadenus Fremontii

Name.	Date of Graduation.	Thesis.
Schneider, Henry Ralston	1891	
Schwartz, Harry	1891	
Seifert, Charles A	1887	Chionanthus Virginica
Selzer, Edward	1877	Precolation vs. maceration
Shumate, Thomas E.	1890	
Skilling, Harry H	1885	Eucalyptus globulus
Skinner, Edwin E	1886	Arctostaphylos uva ursi
Skinner, Robert W	1883	Semen bardanæ
Smith, Arthur H	1879	Fucus nodosus
Smith, Kirby B	1890	
Sommer, Adolph	1879	Calcium cyanide
Squires, Harry J	1890	
Thevenet, Ernest J	1888	Eugenia jambolans
Topley, James H	1885	Volumetric estimation of ammonium, potassium, and sodium hydrates
Topley, William H	1888	Volumetric assay of Aqua Chlori
Trask, Henry C.	1890	
Trautz, Otto George.	1891	
Troppmann, Charles M	1881	Rhododendron occidentale
Tryon, James W	1882	Mimulus glutinosus
Turner, Guy S	1885	Examination of Bromide of Potassium
Van Werthern, Joseph	1889	Arbutus Menziesii
Volkmann, Martin F	1891	
† Vreeland, Ph. L	1879	Syrupus ferri iodidi
Ware, John Hiram	1891	
Wagner, Alien C	1889	Linum
Wall, Henry A	1883	Erythroxylon coca
Waller, Julian L	1889	Estimation of caffeine
Walsh, Andrew D	1884	Malva rotundifolia
Warren, Joseph S	1887	Liquor ferri chloridi
Weihe, Otto A	1889	Salix nigra
Weiss, Philip	1878	Leeches
Westlake, Leonord John	1891	
Williams, Laurence E	1889	Naregamia alata
White, Thomas J	1888	Franciscea uniflora
Whitney, William B.	1884	Euphorbia eremocarpus
Wight, David	1888	California drug law
Worth, Thomas.	1891	
Wulzen, Dietrich H., Jr.	1887	Cicuta Californica
† Young, Wilfred M	1882	Megarrhiza Californica
Zemansky, J. H	1878	Nicotiana tabacum

† Deceased.

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Argenti, Jerome J. B.	1881	The F. A. Weck Co., S. F.
Airaldi, August.	1892	cor. 7th and Folsom St., S. F.
Bacon, Gaston E.	1875	26 Main St., S. F.
Barbat, J. Henry, M D.	1880	1702 Folsom St , S F.
Barbat, Josie E.	1884	Langley & Michaels Co., S. F.
Beckett, F. A.	1883	The F. A. Weck Co., S. F.
Besthorn, Henry E D.	1884	Langley & Michaels Co., S. F.
Bernheim, Moses R.	1891	cor. Ellis and Buchanan Sts., S. F.
Bagot, Edw. A.	1892	Napa and Kentucky Sts., South S. F.
Bilger, Frank W.	1889	San Leandro, Cal.
Borchers, Adolph W.	1889	Mack & Co., S. F.
Boswell, Frank M.	1887	542 Kearny St., S. F.
Callender, Ernest G.	1891	1018 Valencia St., S. F.

Name.	Class.	Address.
Cavagnaro, August A.	1892	cor. Union and Stockton Sts., S. F.
Cerf, Joseph L.	1891	100 Stockton St., S. F.
Cogswell, Fred L.	1892	Auburn, Cal.
Cox, Levitt H.	1889	Polyclinic, 315 Ellis St., S. F.
Cleary, Stephen	1890	St. Mary's Hospital, S. F.
Crowley, Thos. J.	1892	603 Merchant St., S. F.
D'Artenay, Eugene	1882	cor 24th and Potrero Ave., S. F.
Davis, Wm. J.	1885	East Oakland, Cal.
Delicat, J Fred A.	1888	542 Kearny St , S. F.
Devine John	1879	cor Geary and Fillmore Sts , S. F.
Donaldson, John G.	1891	Oakland, Cal.
Drossel, Aug A., M. D.	1886	cor. Jackson and Powell Sts., S. F.
Driscoll, Fred A	1888	cor. 10th and Folsom Sts., S. F.
Fox, Jay E.	1892	1366 9th St., Oakland, Cal.
Gates, Emery P.	1887	100 Stockton St., S. F.
Gibson, Martin R	1891	612 Hyde St., S. F.
Gienger, Chas. J.	1892	700 Washington St., S. F.
Green, Frank T.	1882	cor. Fell and Devisadero Sts., S. F.
Grossman, Edw. L	1891	cor. Union and Powell Sts., S. F.
Grazer, Fred A, M. D.	1880	Berkeley, Cal.
Hall, B. Fred	1889	Modesto, Cal.
Harris, Louis.	1891	Fresno, Cal.
Harvey, Geo. J.	1889	Langley & Michaels Co., S. F.
Happersberger, Emil	1882	cor. 6th and Market Sts., S. F.
Hawkes, Robt. H.	1892	812 Myrtle St., Oakland, Cal.
Heinzeman, Edw. A.	1892	Los Angeles, Cal.
Higgins, Chas. C.	1888	603 Montgomery St., S. F.
Hoover, Ulysses G.	1890	119 Powell St., S. F.
Huna, Geo. B.	1892	622 Broderick St., S. F.
Hueter, Gus. A	1890	cor. 24th and Howard Sts., S. F.
Hulting, B. F.	1880	cor. 3d and Howard Sts., S. F.
Johns, T. Edwin	1892	Los Gatos, Cal.
Kellogg, Wilfred H.	1892	1149 14th St., Oakland, Cal.
Kelsey, Harry D.	1888	Berkeley, Cal.
Kelsey, J. Edson	1891	Berkeley, Cal.
King, Wm. H. V.	1891	Redwood City, Cal.
Ladd, Henry	1891	cor. 16th and Howard Sts., S. F.
Legge, Robt. A.	1891	cor. California and Hyde Sts., S. F.
Leet, Robt. A.	1890	Bowman & Son, Oakland, Cal.
Leithold, John V.	1890	Woodland Cal.
Link, Victor A.	1890	400 O'Farrell St., S. F.
Lavotti, Fred.	1891	1400 Dupont St., S. F.
Meyers, August W.	1885	cor. California and Steiner Sts., S.F.
Mardis, Benj. A., M. D.	1890	St. Luke's Hospital, S. F.
Medros, Joseph J.	1890	1450 7th St., Oakland, Cal.
McCarthy, James H.	1888	202 Stockton St., S. F.

Name.	Class.	Address.
Munson, James G.	1884	San Jose, Cal.
Newmann, Felix H.	1891	Monterey, Cal.
Nichols, Horace S.	1887	Healdsburg, Cal.
Nightingale, Joseph B.	1892	cor. Fell and Devisadero Sts., S. F.
Oberdeener, Samuel.	1880	Santa Clara, Cal.
O'Grady, James J	1891	Sissons, Cal.
O'Neil, Ambrose E.	1889	The F. A. Weck Co., S. F.
Olds, George L	1891	G. B. Flints, Oakland, Cal.
Patterson, Frank F.	1891	1924 Taylor St., S. F.
Peck, Samuel S.	1892	cor. Mason and Post Sts., S. F.
Perkins, Philip J	1888	33 Grant Ave., S. F.
Potter, Grace M.	1892	Los Angeles, Cal.
Preuss, John	1892	Marshfield, Oregon.
Prosser, Sanford S.	1891	111 Grant Ave., S. F.
Polk, Chas. W.	1892	cor. Sutter and Broderick Sts., S. F.
Ray, Fred E.	1876	Sacramento, Cal.
Rees, David R.	1892	Livermore, Cal.
Roche, Thos. B.	1892	701 Market St., S. F.
Ryan, Peter A	1892	C. E. Worden & Co., S. F.
Sanborn, Wm. K	1888	Toland Medical College, S. F.
Samuels, Edw. H., M. D.	1891	City Receiving Hospital, S. F.
Schumate, Thos. E.	1890	cor. Sutter and Devisadoro Sts., S.F.
Schmidt, Edwin V.	1890	Chico, Cal.
Schwartz, Harry	1891	1144 McAllister St., S. F.
Schmelz, Chas. J.	1885	1500 Mission St., S. F.
Seifert, C. A	1887	German Hospital, S. F.
Sharp, Sol. A.	1892	cor. Polk and Jackson Sts., S. F.
Stock, Wm. S.	1892	Portland, Oregon.
Skinner, Ed. E.	1886	Eureka, Cal.
Smith, Kisby B.	1890	Oakland, Cal.
Squires, Harry J	1890	502 Bush St., S. F.
Thevenet, Ernest J.	1888	700 Washington St., S. F.
Topley, James H.	1885	Vallejo, Cal.
Trask, Harry C.	1890	cor. Post and Buchanan Sts., S. F.
Trautz, Otto G	1891	Traver, Cal.
Villain, Albert J.	1892	1406 Mason St., S. F.
Volkmann, Martin F	1891	102 Eddy St., S. F.
Walsh, Andrew D.	1884	Redwood City, Cal.
Wagener, Allen C.	1889	Langley & Michaels Co., S. F.
Warren, Jos. S.	1887	1144 McAllister St., S. F.
Ware, John H	1891	cor. 17th and Guerrero Sts., S. F.
Waller, Julian L.	1889	33 Grant Ave., S. F.
Wechsler, Paul	1892	234 Sutter St., S. F.
Weihe, Otto A.	1889	640 Post St., S. F.
Worth, Thomas.	1891	537 Mission St., S. F.
White, Thomas.	1888	202 Stockton St., S. F.

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Surgery—JOHN M. WILLIAMSON, M. D.; A. K. HAPERSBERG, M. D.
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Gynecology—CHAS. A. VON HOFFMAN, M. D.
Cutaneous and Venereal Diseases—DOUGLAS W. MONTGOMERY, M. D.

The Preliminary Term of 1893 will begin March 1; the Regular Term, June 1.

ROBERT A. McLEAN, M. D., Dean,
603 Merchant Street, corner of Montgomery,
San Francisco, Cal.

University of California.

College of Dentistry.

Donohoe Building, Corner Market and Taylor Streets, S. F.

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C. L. GODDARD, A. M., D. D. S., Professor of Mechanical Dentistry, Dental Metallurgy and Orthodontia.

L. L. DUNBAR, D. D. S., Dean and Professor of Operative Dentistry and Dental Histology.

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HARRY P. CARLTON, D. D. S., Lecturer on Operative Dentistry.

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S. A. HACKETT, D. D. S., Demonstrator of Mechanical Dentistry.

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J. D. Hodgen, Assistant in Metallurgy.

CHARLES E. POST, D. D. S., Demonstrator of Mechanical Dentistry.

H. D. NOBLE, D. D. S., Demonstrator of Orthodontia Technic.

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F. J. Saxe, D. D. S.
Max Sichel.
E. L. Townsend, D. D. S.
L. Van Orden, M. D.
William Wood.

The Session of 1893 begins Sept. 4, and ends May 31, 1894.

Graduates in Medicine may apply for the Degree of Doctor of Dental Surgery, after having passed *two* full years of practical instruction or experience in Dentistry, *one* year of which, including one course of lectures, must be spent in this institution.

In accordance with a rule adopted by the National Association of Dental Faculties, requiring three years' attendance of all matriculates, to take effect in 1892, matriculates who are graduates in Medicine will be admitted to the second year without examination.

Graduates of the Dental Department are admitted to the Medical Department as students of the second year without examination.

FEES.

Matriculation (paid but once)	$ 5 00
Lecture Fees (each year)	100 00
Practical Anatomy Fee (first and second years)	10 00
Special Course (Microscopic Technic) Junior and Senior	10 00
Examination Fee (not returnable)	25 00

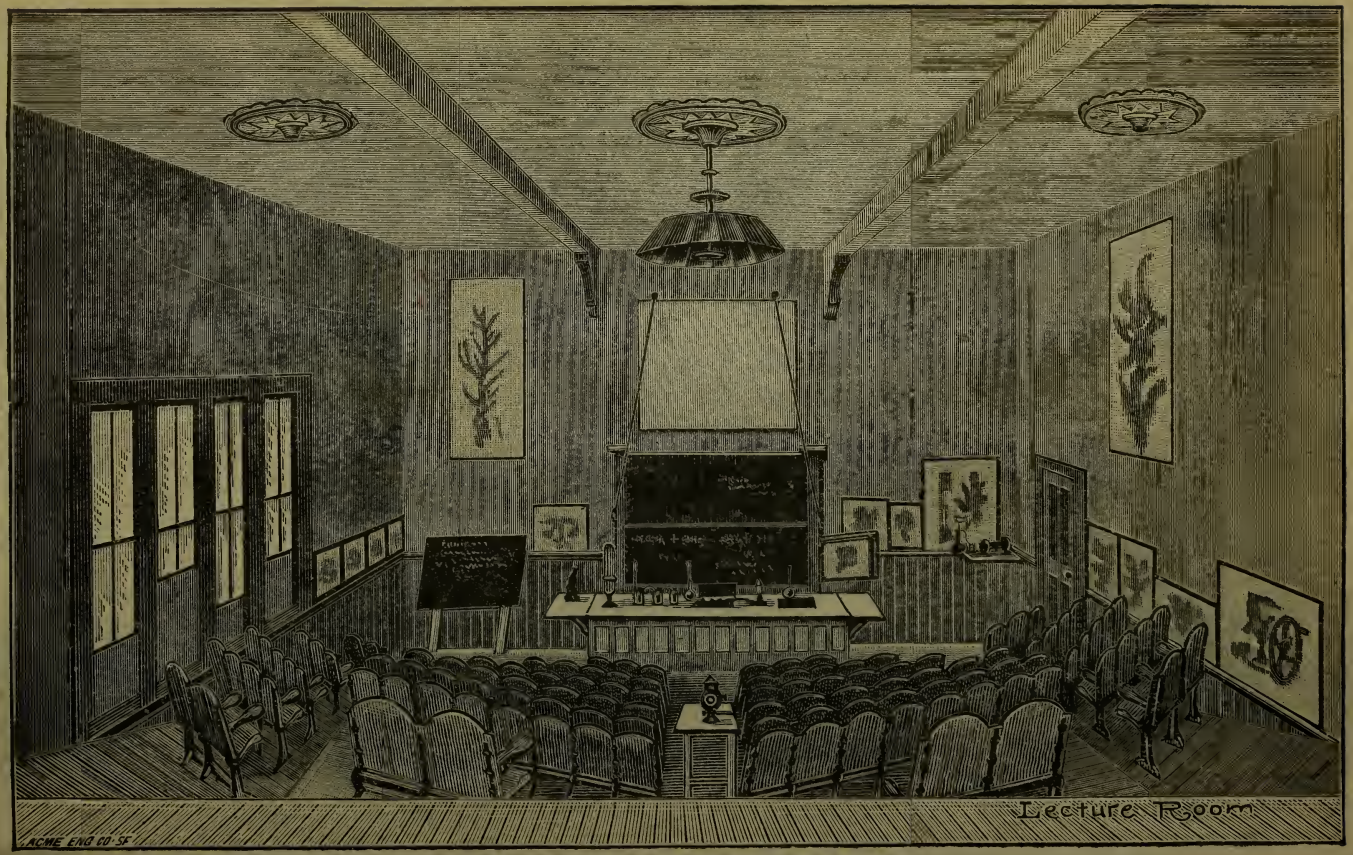
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DEPARTMENT OF PHARMACY
UNIVERSITY OF CALIFORNIA

SESSION OF 1896.

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College of Pharmacy

DEPARTMENT OF PHARMACY, UNIVERSITY OF CALIFORNIA

113 FULTON STREET SAN FRANCISCO, CAL.

Between Polk Street and Van Ness Avenue

SESSION OF 1896.

Matriculation and Entrance Examination, Tuesday, April 14th

Opening of the College, Friday, April 17th, at 9 A. M.

Alumni of this College and others who wish to receive this Prospectus are requested to forward their names and addresses to the Dean.

SAN FRANCISCO:
CALIFORNIA COLLEGE OF PHARMACY
1896

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J. J. B. ARGENTI, Ph. G., Professor of Botany,
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CHARLES A. SEIFERT, Ph. G., Professor of Theory and Practice of Pharmacy,
and Director of the Pharmaceutical Laboratory,
Corner of Seventh and Myrtle Streets, Oakland.

J. J. B. ARGENTI, Ph. G., Professor of Microscopy, Vegetable Histology and
Pharmacognosy.

FRANK T. GREEN, Ph. G., Professor of Analytical Chemistry, and Director of the
Analytical Laboratory,
No. 500 Devisadero Street.

LECTURERS

C. HADLEY CARLSON, M. D., Physiology, in its Relations to Drug Action.

H. R. WILEY, A. B., on Pharmacal Jurisprudence.

INSTRUCTORS

ROBERT E LEET, Ph. G., Instructor in Chemistry.

H. E. D. BESTHORN, Ph. G., Instructor in Pharmacy.

O. A. WEIHE, Ph. G., Instructor in Materia Medica.

M. R. GIBSON, Ph. G., Instructor in Microscopy, Vegetable Histology and Pharmacognosy.

ROSTER

Senior Class

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9-10:30 Pharmacognosy	Pharmacy Review	Chemistry Review	Materia Med. Review	Microscopy Review
10:30-12 Materia Medica	Chemistry	Materia Medica	Chemistry	Veg. Histology
1:30-3 Analyt. Chem. Review	Chemical Laboratory	Pharmacal Laboratory	Physiologic Action of Drugs	
3-4:30 Pharmacal Jurisprudence				

Junior Class

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9-10:30 Materia Medica	Chemistry	Materia Medica	Chemistry	Microscopy and Veg. Histology
10:30-12 Botany	Pharmacy Review	Chemistry Review	Materia Med. Review	Botany Review
1:30-3	Pharmacal Laboratory	Inspection Day	Chemical Laboratory	
3-4:30 Analyt. Chem. Review				

☞ Students are required to attend at least three-fourths of each department of the College work.

ANNOUNCEMENT.

The Trustees and Faculty of the California College of Pharmacy herewith present this Prospectus of the Twenty fourth Annual Course of Instruction.

The Requirements for Admission, being now made to cover the first year's work in the High Schools of this State, those who are intending to enter College should make sure that they can fulfill this condition. If they cannot produce certificates showing that they have satisfactorily completed the studies named, they should earnestly apply themselves to make up their deficiencies in this direction before presenting themselves for the entrance examination. The effort thus put forth will be of the greatest value to them, not only during their College career, but in all their future life.

Previous Experience in Drug Stores.—Applications are frequently made by persons who wish to enter the college before they have had any experience in pharmacy. In all such cases the Trustees advise the applicants to find employment in a drug store for at least a year before attending college. The practical knowledge thus gained enables students to comprehend readily, and therefore to make more satisfactory progress.

Time of Year of Lecture Course.—Contrary to the custom in Eastern and Western Colleges of Pharmacy, this College holds its terms in the summer months. It is the season when business in the city is lightest, thus rendering it more easy for students to find employment as relief clerks, and to study at home.

New Laboratories.—Since the close of the last session, two new laboratories have been fitted up, and the old one rearranged so as to specially adapt it to pharmaceutical work. Of the other two, one is arranged for analytical chemistry, and the other for microscopical work in botany, vegetable histology and pharmacognosy. In fitting up these laboratories, the most approved plans have been adopted as a result of the recent trip to the Eastern States of the President of the College, Mr. F. A. Beckett, who visited the leading colleges of pharmacy, and inquired into their methods of instruction. As now equipped, this College offers teaching facilities equalled by few similar institutions in the country.

Increase in the Hours of Attendance.—The curriculum of the present session shows a considerable increase in the number of hours' attendance required. In order to effect this it has been found necessary to arrange for having the students occupied six hours a day (except

Saturdays and Sundays). When to this is added the time consumed in writing up laboratory and lecture notes, and such study as the work and lectures of the day necessitate, it will be seen that the students will be fully employed.

Practical and Theoretical Teaching.—The additional laboratories now provided have rendered possible what the Trustees and Faculty have always desired to carry out, viz., to make the instruction of the College thoroughly practical. This, however, is not to be done at the expense of theoretical knowledge which is essential to intelligent research, but in addition to it. Accordingly, the lectures given will now consist largely of directions for the performance of work to be actually done under the Professors' eyes, with expositions of the principles involved and of the theories held regarding them.

Other New Features.—Two new features have been introduced into the curriculum this year; one is a short series of lectures on Physiology in relation to the action of drugs. This course will form a prelude to the Senior Materia Medica lectures, and has been deemed necessary in order that the student may have an intelligent idea of the vital processes so far as they are affected by the administration of medicaments. It is in no sense intended to fit pharmacists for the practice of medicine, but to enable them to understand why and how drugs produce their characteristic effects. Possessed of this knowledge the pharmacist is a more efficient aid to the physician than he can be without it.

The other innovation is a short series of lectures on Pharmacal Jurisprudence, by a competent member of the legal profession. This course is designed to show the pharmacist his status on the principal legal points that arise from time to time in his calling. The Trustees invite all druggists to attend these lectures free, believing that they will be of value to the profession at large.

San Francisco as an Educational Center.—San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, the visiting of which, accompanied by the professors, is a feature in the College instruction. The University of California is near by, and there is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising, and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

REQUIREMENTS FOR ADMISSION.

1. Applicants for admission must be at least eighteen years of age, except in the case of graduates of High Schools of this State or of "Accredited Schools," or of Normal Schools of this State, or of other institutions of a grade equal to the above. All such applicants are admitted irrespective of their age. (While it is advisable that students shall have had one or two years' practical training in a drug-store before entering the college, this is not compulsory.)
2. Applicants will be accepted who bring any of the following credentials:
 a. Certificates of graduation from High Schools of this State.
 b. Diplomas of graduation from schools or academies accredited by the State University. (See Register of the University of California.)
 c. Certificates of high standing in other institutions of the collegiate grade.
 d. Diplomas from Normal Schools of this State.
 e. First grade teachers' certificates of this State.
 f. Certificates of having completed satisfactorily the first year's course in High Schools of this State.
3. Applicants who do not present any of the foregoing credentials will be examined in the following branches:
 a. English—They will be required to show their ability in spelling, punctuating, use of capitals, grammatical construction and correctness of expression. (The handwriting will be estimated and form a part of this examination.)
 b. Geography—American and general.
 c. Free-hand drawing.
 d. Mathematics—*Arithmetic:* Fundamental rules; fractions, common and decimal; denominate numbers; percentage; proportion. *Algebra:* Fundamental rules; fractions; equations of the first degree, consisting of two or more unknown quantities.
 e. Latin—Rudiments; declensions of nouns, pronouns, adjectives; conjugations of verbs; translation of simple sentences from Latin to English and English to Latin.

Applicants who fail to obtain the required percentage in Latin may be entered conditionally, but will be required to pass the examination satisfactorily before entering the Senior class at the time of the next entrance examination.

MATRICULATION.

Applicants for admission are required to present their credentials to the Dean at the College on

Tuesday, April 14th, at 9 A. M.

for the purpose of matriculating, when those whose credentials are insufficient will be examined in the above mentioned subjects.

CHEMISTRY.

Lectures and Demonstrations by

PROFESSOR WILLIAM T. WENZELL, M. D., PH. G., PH. M.

Junior Course.—Inorganic Chemistry.

The lectures to the Junior Class will be delivered on Tuesdays and Thursdays, from 9 to 10:30 A. M.

They will treat of elementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, the electro-chemical theory, the equivalence of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmaceutical student.

SYLLABUS.

1. Introduction to physical science. General properties of matter—extension, impenetrability, divisibility, indestructibility, porosity and inertia.
2. The attraction of matter — gravitation, cohesion, adhesion. The four states of matter—the gaseous, the liquid, the solid and the radiant.
3. Chemical attraction, analysis and synthesis, atoms and molecules.
4. Elements—division into metals and metalloids, symbols, atomic weights, notation ; the laws of chemical combination, as exemplified in the quantitative law, the law of multiples, and the law of reciprocal proportions.
5. The law of equivalence of combining power of elements, their classification, the variation of equivalences. How to indicate equivalence. Graphic symbols.
6. The electro-chemical series—chemical reaction, analytical, synthetical and meta-thetical. Typical reactions illustrated by chemical equations.

7 and 8. Rules for writing chemical formulas and naming them. The multiplication of atoms and molecules. Definition of an acid and a base. The derivation of salts from acids and bases. Simple and compound radicals.

9. Oxygen—History, occurrence in nature, preparation, physical properties, chemical properties, liquefaction, functions in nature in relation to organic life, uses in arts and medicine.

10. Ozone—History, occurrence in the atmosphere, preparation, physical and chemical properties, constitution and uses.
11. Hydrogen—History, occurrence, preparation, physical and chemical properties, oxy-hydrogen blowpipe, effect on animals, its compounds with oxygen.
12. Water—Occurrence in nature, preparation. Its exact composition by analysis and synthesis. Physical properties, as water, as steam and as ice. Chemical properties, the formation of hydrates. Water of crystallization. Deliquescence and efflorescence.
13. Natural waters—Rain, spring, well, artesian, river and pond waters. The natural constituents of these, mineral.
14. Natural waters continued—Living organisms, plants and animals; contaminated waters, and their relation to a sanitary point of view. Selection of water for industrial and domestic purposes. Purification of water and its sanitary analysis. Seawater—its composition.
15. Mineral waters—Classification, saline, acidulous, chalybeate, sulphurous, silicious, etc., with examples.
16. Hydrogen dioxide—History, preparation, properties, uses. Nitrogen—History, preparation, properties, physical and chemical properties; functions in nature, its compounds.
17. The atmosphere—Its composition, its relation to combustion, to animal and vegetable life; microbes and their germs, relation to mould, fermentation, putrefaction, disease, sewer gas.
18. Compounds of nitrogen and oxygen. Nitrogen pentoxide. Nitric acid, occurrence, preparation, composition, impurities, properties, tests; uses in arts and medicines. Nitrogen monoxide—History, preparation, purification, properties, use as anæsthetic.
19. Nitrogen dioxide, nitrogen trioxide, nitrous acid, nitrogen tetroxide—their preparation and their physical and chemical properties. The metallic nitrates and nitrites.
20. Compound of nitrogen and hydrogen. Ammonia—occurrence, preparation, properties, tests, uses in the arts and medicine.
21. Carbon. Occurrence in nature. The diamond, graphite, amorphous carbon, anthracite, bituminous coal, charcoal, lampblack, gas carbon; their nature, properties and uses.
22. Compounds of carbon and oxygen—Carbon dioxide, preparation, production by animal life, and by processes of fermentation. Its composition, physical and chemical properties, liquefaction, solidification, solubility in water. Carbonic acid, formation, tests, uses in plants, uses in the arts. Carbon monoxide—Preparation, physical, chemical and physiological properties. Production by coal stoves.
23. Metallic carbonates.
24. The halogens—Chlorine. Its discovery, occurrence, preparation, physical and chemical properties, tests. Compound of chlorine and hydrogen, hydrochloric acid. Composition, preparation, properties, tests and uses. Aqua regia, composition and uses.

25. Oxides and acids of chlorine. Hypochlorous acid, chlorinated lime, Javelle water, Labarraque's solution, bleaching. Chloric acid and chlorates.
26. Metallic chlorides.
27. Bromine—Its discovery, occurrence, preparation, properties, tests, and important compounds; hydrobromic acid, uses in arts and medicine. Iodine—Discovery, occurrence, preparation, properties, tests, compounds and uses. Hydriodic acid. Fluorine, history, occurrence, compounds. Hydrofluoric acid, preparation, properties, tests, uses in arts.
28. Metallic bromides, iodides and fluorides.
29. Sulphur. History, occurrence, preparation, properties; varieties of sulphur tests. Metallic sulphides.
30. Compounds of sulphur and oxygen. Oxides and acids of sulphur. Sulphur dioxide, preparation, properties, uses in arts and medicine. Sulphurous acid, preparation and properties.
31. Sulphuric oxide, preparation and properties. Sulphuric acid, preparation, properties, tests and uses. Fuming sulphuric acid, composition, preparation, properties.
32. Metallic sulphates and sulphites. Thiosulphates.
33. Compound of sulphur and hydrogen, hydrogen sulphide; preparation, properties, tests and uses in analytical chemistry; metallic sulphides, carbon disulphide, preparation of salts, chlorides of sulphur.
34. Boron—Occurrence, preparation, properties; boric acid; metallic borates. Silicon—Occurrence, preparation, properties, silicic acid, metallic silicates.
35. Phosphorus—History, occurrence; common phosphorus, preparation; amorphous phosphorous, preparation; their properties and uses in arts and medicine, metallic phosphides.
36. Phosphuretted hydrogen, compounds, preparation, properties. Oxides and acids of phosphorus, hypophosphorous acid, preparation, composition, properties and use in medicine. Pyrophosphoric acid, metaphosphoric acid, and common phosphoric acid, their uses and preparation.
37. Metallic phosphates.
38 and 39. Arsenic—Discovery, occurrence, preparation, physical and chemical properties. Compounds of arsenic and sulphur, arseniuretted hydrogen, preparation, properties; oxides and acids of arsenic. Arsenious oxide, occurrence, preparation, properties, tests, uses. Marsh's, Reinsch's and Fleitmann's tests. Arsenious acid; properties; arsenic oxide and arsenic acid, composition and preparation; metallic arseniates and arsenites.
40 and 41. Antimony—History, occurrence, preparation, physical and chemical properties. Antimoniuretted hydrogen, preparation, properties and tests. Oxides and acids of antimony, sulphides of antimony, chlorides of antimony, tartar emetic.

42. Metals—Definition, occurrence in nature, physical properties, lustre, opacity, color, specific gravity, malleability, ductibility, fusibility, volatility, alloys, crystallization, classification.
43. The Alkaline group—Sodium, Potassium, Lithium; occurrence, preparation, physical and chemical properties and tests. Oxides and Hydrates.
44. The Earthy bases—Calcium, Barium and Strontium; occurrence, preparation, physical and chemical properties, tests. Oxides and Hydrates.
45. The Magnesium group—Magnesium, Zinc, Cadmium; occurrence, preparation, properties, tests. Oxides and Hydrates.
46. Mercury, Silver—Occurrence, preparation, properties and tests. Oxides and Hydrates.
47. Cerium, Tin, Lead, Bismuth—Occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.
48 and 49. The Iron group—Iron, Nickel, Cobalt, Manganese, Chromium and Aluminum; occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.
50. Uranium, Tungsten, Molybdenum, Gold, Platinum, Palladium—Occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.

Senior Course.—Organic Chemistry.

The lectures to the Senior Class will be delivered on Tuesdays and Thursdays, from 10:30 A. M. to 12 M.

In the Senior Course the student will be instructed in the more advanced departments of chemical philosophy, molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives, alcohols, ethers, acids, glucosides, alkaloids, etc., will receive their due share of attention.

SYLLABUS.

1. Chemical philosophy—The Atomic Theory, the Law of Mariotte, the Law of Charles, the Law of Avogadro.
2. The combination of gases by volume. Specific heat and relation to atomic weight. The atomicities of elemental molecules.
3. The barometer—Construction and uses in gasometry. The co-efficient expansion of gases. The law of diffusion of gases.
4. Proximate and elementary analysis. Empirical, molecular, rational and graphic formulas.
5. The classification of organic compounds—Homologous series, physical characteristics, densities, melting and boiling points, optical properties, etc.

6. The paraffins—Saturated and unsaturated. Their isomerism, nomenclature and their structure, as exemplified by graphic formulas.
7. Petroleum and its products—Ozokerite, paraffin, illuminating gas, lubricating oils, benzine, etc.
8. Monovalent alcohols—Their constitution. general formula, methyl, ethyl, propyl, butyl and amyl alcohol, their preparations and properties.
9. Isomerism of the monovalent alcohols—Primary, secondary and tertiary, nomenclature, their structure and physical properties.
10. The products of their oxidation—Aldehydes and ketones, their physical and chemical characters.
13. Ethers derived from monovalent alcohols—Haloid ethers, simple ethers, compound ethers (esters), their constitution and preparation.
14. The divalent alcohols (glycols) ; the trivalent alcohols and ethers. Glycerine and nitroglycerine, fats and soaps, butter and oleomargarine, oils drying and non-drying, oleates.
15. Tetravalent, pentavalent and hexavalent alcohols and derivatives.
16. The carbohydrates—The glucoses, the saccharoses and amyloses, their characteristics and relations.
17. Carbohydrates and derivatives—Glucose, levulose, cane sugar, milk sugar, maltose, dextrine, glycogen, starch, lignin, cellulose, nitro-celluloses.
18. The glucosides—Salicin, arbutin, glycyrrhizin, amygdalin, frangulin, sinalbin, myronic acid, synthetic glucosides.
19. Fermentations—Vinous, lactous, butyrous, etc.
20. The organic acids—Their general formula, constitution and physical properties.
21. Monovalent and monobasic acids—Formic, acetic, butyric and valerianic acids. Their preparation and properties.
24. Divalent monobasic and dibasic acids, derived from divalent alcohols—Oxalic, lactic, succinic, etc., acids.
25. Trivalent acids derived from the corresponding alcohols—Glyceric, malic, tartaric, saccharic, aconitic, citric, etc.
26. Amides and their derivatives—Their general formula ; acetamides, asparagin, aspartic acid. Amines—General formula and constitution ; primary, secondary and tertiary—Monomines, diamines and triamines.
27. Alkaloids—Oxygenated ; opium bases, cinchona bases, strychnine, atropine, cocaine, etc.; non-oxygenated, conine, nicotine, etc.; their constitution.
28. Carbonic acid and its derivatives—Carbon disulphide, carbamic acid, urea, etc.
29. Cyanogen and its compounds—Hydrocyanic acid, metallic cyanides, ferro and ferri cyanides, sulpho-cyanates.
30. The aromatic compounds—Benzine, its constitution and the general characters of its derivatives.
31. The isomerism of the substitution, as exemplified in the halogen,

nitro, amido, sulphonic, etc., compounds, and their relative position in the benzine ring.

32. Halogen derivatives of the Benzene Hydrocarbon.
33. Sulphonic derivatives.
34. Nitro derivatives.
35. Amido derivatives.
36. The monovalent phenol—Carbolic acid and derivatives. Phenol-phthalein, phenol-sulphonic acid, etc.
37. Aromatic alcohols—Benzyl alcohol, etc. Aromatic aldehydes; benzyl, cumic, cinnamic aldehydes. Aromatic ketones. Hypnone.
38. Divalent phenoles—Pyrocatechin, resorcin, hydro-quinone, orcin, etc.
39. Trivalent phenoles—Pyo-gallol, phloroglucin, oxyhydro-quinone, Monobasic, aromatic acids—Benzoic, hippuric, toluic, phthalic.
40. Unsaturated—Atropic, hydro-cumaric, tyrosin, tropic, gallic, tannic, quinic, cumaric, caffeic, ferulaic acids.
41. Indigo group—Indigo blue, indigo white, indigo sulphonic acid. Isatin, indoxyl, indol, skatol.
42. Naphthaline series, its addition and substitution compounds: Hydrides and hydrates, *a* and *b*. Naphtols and position of the substitution groups.
43. Aromatic compounds containing three benzine rings—Anthracine and its derivatives: Anthraquinone, alizarine, purpurine, chrysarobine, etc.
44. Pyridine bases—Ptomaines.
45. Terpines, camphors, essentials, oil, resins, oleo resins and balsams.
46. Aromatic Compounds with more than one benzine nucleus—Diphenyl group: Diphenyl, di-p-amido-diphenyl, carbazole, fluorene, etc.
47. Triphenyl group—Triphenylmethane and its derivatives (aniline colors).
 a. Malachite group—Diamido derivatives.
 b. Rosaniline group—Triamido derivatives.
 c. Rosolic acid group—Oxy derivatives.
 d. Phthalein group—Meta carboxyl derivatives.

48 and 49. The chemistry of Synthetic remedies,

50. Outlines of Crystallography.

CHEMICAL LABORATORY—EXPERIMENTAL.

PROFESSOR FRANK T. GREEN, Director.

Junior Course.

Thursdays, from 1.30 to 4.30 p. m.

This laboratory has recently been refitted with desks and appliances of modern pattern. Each desk contains drawers and lockers, water, gas,

and drainage, besides being furnished with a set of reagents, and necessary apparatus for a systematic course in elementary experimental chemistry, the behavior of the bases and acids, and qualitative chemical analysis. The junior course embraces the study of chemistry from actual experiment; for a student learns something, to hear how a thing should be done; more, to see how it should be done; but most, to do it himself, under the guidance of a teacher and with the conveniences of a laboratory.

Believing in the laboratory method of teaching, the trustees have striven to have the courses complete and practical. The junior (1st session) begins with the plainest example of chemical action, then follow the analysis and synthesis of simple things. The chemistry of the gases, where the student separates or combines oxygen, hydrogen, nitrogen, chlorine, etc., is taken up. Then the non-metals are considered, and their properties investigated by each student.

The chemistry of the metals completes the first session of the junior year in the chemical laboratory. Remsen's Inorganic Chemistry being the text book. The student's time during the chemical laboratory—experimental—second session, is taken up by investigating the properties of the metals, as shown by reagents; and with the behavior of the acids form the first steps leading to the study of analytical chemistry.

Qualitative chemical analysis completes the term, the text book being Simon's Manual of Chemistry. In adopting such a wide range of study, it will be the aim of those in charge to have typical processes of precipitation, neutralization, crystallization and analysis carefully and correctly performed, rather than cram the student with hurried work.

SYLLABUS.

First Session.—Two Months.

1. Chemical action, changes, mixtures and compounds; the atom and the molecule; volume and weight.
2. Oxygen—Its separation, with a series of experiments showing its properties. Ozone—The chemical reaction. Hydrogen—Its separation, properties. Heat—Its development.
3. Hydrogen and Oxygen—Water.—Analysis and synthesis of; its behavior as regards heat and cold; moisture and water of crystallization. Hydrogen peroxide—Its preparation and properties. Percentage composition.
4. The Haloids—The separation of chlorine, bromine, iodine, and hydrofluoric acid; experiments showing properties of each; the chemical equation.
5. The Acids and Alkalies and their relationship—Indicators by change of color. The Oxides—Bases and anhydrides. The manufacture of hydrochloric acid, with calculation of theoretical yield, and compar-

ison with actual results of students' work. The properties of hydrochloric acid—Specific gravity and its application.

6. Nitrogen—The separation of nitrogen ; its properties and the nature of some of its principal oxides, as shown experimentally by each student. Salts.
7. Ammonia. Its formation, properties. Ammonium and some of its salts. The properties of gases and solubility. The preparations of nitric acid. Predictions as to yield from calculations compared with actual results—Indications of Purity.
8. Carbon. Its allotropic forms, its properties and its oxides. The specific gravity of gases and absorption. *Silicon and Boron*—Forms, combinations and properties of compounds containing each. The Blowpipe and its qualitative tests.

9 and 10. The Precipitate, the Solution and the Crystal Manufacture of Salts. Chemical processes as employed by the manufacturer. Summary of theories, as shown by practical work.

Second Session—Four Months.

11—15. The Metals, physical properties of each, and their chemical behavior. Silver, lead, mercury, bismuth, cadmium, copper, arsenic, antimony, gold and platinum, iron, alum and chromium, zinc, manganese, cobalt and nickel, calcium, aluminum, barium, strontium, magnesium, potassium, sodium and ammonium. Chemical processes, as employed by the analyst.

15—20. The outlines of qualitative chemical analysis of the bases.

20—23. The chemical behavior and tests of the acids.

23—26. Identification of acids, bases or salts.

CHEMICAL LABORATORY—ANALYTICAL.

PROFESSOR FRANK T. GREEN, Director.

Senior Course.

Tuesdays, from 1:30 to 4:30 P. M.

The analytical first session embraces a systematic course of quantitative chemical analysis, volumetric, gravimetric and colorimetric. This is a necessity in the education of a practical pharmacist, and the course is shaped to this end. It begins with quantitative (gravimetric), chemical analysis and manipulation. Assays and tests of U. S. P. preparations follow, volumetric analysis and its application to practical pharmacy ; also spectrum analysis, water analysis, sanitary, technical and mineral, together with colormetric, completes the first senior session, the text book being SCHIMPF'S volumetric analysis.

The second session begins with urinalysis and follows it in all its

practical details, a feature of chemical work which is deemed of great importance to the student of pharmacy.

The polaristrobometer is employed in estimating diabetic sugar, and the absorption bands of coloring matters of urine are demonstrated by means of the spectroscope. Toxicology is dwelt upon ; also the polarization of sugar and albumen ; milk analysis, according to the methods of the city Board of Health, and the search for food adulterants complete the course. The text-book being "The Milk, the Urine and the Common Poisons," by Holland.

In the back of the U. S. Pharmacopœia there are several pages devoted to tables of gravities, correction of temperatures, tests and volumetric solutions, formulæ and data, a great deal of which to the uneducated pharmacist will be neither valued nor comprehended.

The Analytical Course is made a part of the curriculum of the College, for the special purpose of fitting pharmacists for the work of testing all U. S. P. chemicals for purity or adulterations ; for the estimation of either acids or bases in a salt or solution ; for determining the gravities of all U. S. P. liquids. Year by year volumetric methods are establishing themselves in all practical laboratories and factories, and for a check in pharmaceutical manufacturing are invaluable for their speed and accuracy.

It will be the aim of those in charge of the laboratory to fit these students for the work the world expects of them. Little will be asked of the memory, but the utmost of the understanding, thus avoiding a cramming system, and giving facilities with instruction for advanced work that cannot be gained in either a retail pharmacy or lecture hall.

This course requires twenty-six sessions of three hours each, from 1:30 to 4:30 P. M.

SYLLABUS.

First Session—Three Months.

1—5. Quantitative manipulation and analysis. Gravimetric analysis of U. S. P., preparations. The spectroscope and its application to chemistry.

5—10. Volumetric analysis and its application to official assays.

10—15. Water analysis—Sanitary, technical and mineral, qualitative and quantitative, colorimetric analysis, nesslerizing.

Second Session.—Three Months.

15—20. Urinalysis—Qualitative, quantitative and microscopic. The polarization of urine. The absorption, spectra of blood, etc.

20—25. Toxicology of the active poisons and analysis of foods and tissues for poison. The polariscope and its uses in quantitative work —sugars, albumen and honey.

25. Milk analysis, according to the official methods of the Board of Health.
26. The analysis of foods—Butters, spices, teas, coffee, pickles, canned goods.

PRACTICAL AND THEORETICAL PHARMACY.

PROFESSOR CHARLES A. SEIFERT.

This department is justly regarded as the most interesting, and students who have had active store training, here have an opportunity of studying the philosophy of the operations with which they have become more or less familiar.

The interest usually manifested in this department, is due, no doubt, to the many practical operations and experiments that naturally devolve upon this branch.

The course will be so arranged, that when subjects of practical importance are introduced by the lecturer, the same, if typical, will be taken up in the laboratory for further demonstration and consideration, and so afford the student an opportunity of closely studying every point and principle involved.

Part of the subject however must be treated in a didactic manner, such as the origin, history and development of the art; the definitions and terms employed; the functions and origin of the U. S. pharmacopœia, a comparison with it and those of other countries; the laws regulating the practice of pharmacy; methods and work of State boards, etc.

These subjects, together with many more, will be carefully sifted and reviewed in as practical and interesting a manner as possible.

THE PHARMACAL LABORATORY.

PROFESSOR CHARLES A. SIEFERT, Director.

The work in this branch, starting out simultaneously with the lectures, enables the student to begin with the simplest and most elementary work of the department, and advance to a consideration of the various preparations requiring skill and knowledge in their preparation. Here, each student receives individual instruction according to his needs.

The processes of the Pharmacopœia will especially claim attention, and not only will those galenical preparations, that are frequently made by the retail pharmacist receive the consideration that they deserve, but particular care will be exercised, in order that each student may learn how to make many chemical and pharmaceutical preparations that he is not accustomed to make.

Instruction will be given in the actual preparation of fluid extracts, tinctures, syrups, extracts, powders, pills, plasters, ointments, cerates, suppositories, lozenges, spirits, waters, infusions, confections, granular and crystallized salts, scaled iron salts, the iron solutions of the pharmacopœia, &c., &c.

Junior Course.

THE JUNIOR CLASS will receive their instruction on *Tuesdays from 1:30 to 4:30 P. M.*

Before proceeding with the practical work, a short lecture will be delivered, explaining in detail the various steps in the manipulatory exercise about to follow; the difficulties which will be likely to ensue will be noted, and the method of overcoming them explained.

At the close of this preliminary explanation, each member of the class will proceed to his work table and apply practically the knowledge of the subject that he has acquired.

Test examinations will be held at suitable intervals to indicate the degree of progress made by the operator, whilst the examination in Operative Pharmacy at the end of the course will prove the candidate's fitness to enter the senior course.

SYLLABUS.

1. History of Pharmacy and Pharmacopœias. Arrangement and nomenclature of Pharmacopœias and Dispensatories—Illustrations.
2. Definition and consideration of weight. True and apparent weight. Practical problems in weighing and measuring. History of weights and measures. Systems of weights and measures.
3. Metric System.
4. Specific gravity, density, standards, etc. Specific gravity of solids; of insoluble bodies heavier than water, of insoluble bodies lighter than water, and of bodies soluble in water.
5. Specific gravity of liquids by means of hydrometer, the specific gravity bottle, balance, and by an extemporaneous specific gravity bottle made by student. Adjustment of specific gravity and percentages. Exercises in specific gravity and specific volume.
6. Heat—Its source and management; apparatus for generating it; modes of communicating heat—conduction, convection, and radiation. The practical use of heat in pharmacy.
7. Sand, oil, water, steam, baths, etc. Fusion, sublimation, calcination, granulation, ignition, torrefaction, oxidation, reduction, etc., with their applications in pharmacy.
8. Temperature—Its measurement—Thermometry; the method of preparing and testing thermometers; the use of thermometers in phar-

macy and medicine ; the different scales and their conversion from one to the other.

9. Vaporization—Its divisions: Evaporation and distillation. Evaporation—Spontaneous, rapid, in vacuo, by means of steam, sand and water-baths. Evaporating vessels, vacuum apparatus, etc.
10. Desiccation—Exsiccation ; drying gases and liquids, vegetable drugs and salts.
11. Distillation—Fractional and destructive distillation. Pharmaceutical Stills practically demonstrated.
12. Solution—Simple or true, chemical or compound, pharmaceutical, complex, and saturated solutions. Solutions of gases, density of solutions ; conditions governing solubility, solvents used in pharmacy, determination of solubility, percentage solutions, practical illustrations for dilution and fortification.
13. Filtration—Its uses and the various methods of filtration employed. Colation or straining, decanting, etc. Clarification—The different methods of effecting it. Detannation. Diffusion—Dialysis, crystalloids and colloids. Decoloration.
14. Crystallization—Crystallizable, crystallic, crystalline and amorphous substances; the various methods of obtaining crystals. Deliquescence and efflorescence. Precipitation—Simple and chemical ; the different modes of producing precipitation ; the precipitate, the precipitant and the precipitand ; the different objects of precipitation in pharmacy.
15. Garbling, comminution, sifting, etc. Extraction—the various modes ; maceration and expression, digestion, infusion, decoction and percolation. The derivation and meaning of the menstruum, the marc, the macerate, the percolate, etc.
16. History and theory of percolation. Packing the percolator, regulating the flow of the percolate. The different kinds of menstruum used in pharmacy, with the various active principles which they respectively dissolve.
17. Re-percolation and various other modifications of percolation. Pressure percolation, vacuum percolation, hot percolation, or extraction·
18. Prescription reading and writing—The parts of a prescription ; subdivisions of the inscription ; nomenclature used in prescriptions.
19. Abbreviations used in prescriptions, abbreviation of Latin terms and phrases; metric prescriptions—gravimetric and volumetric.
20. Extemporaneous Pharmacy—The art of compounding and dispensing. Incompatibilities—Chemical, pharmaceutical and therapeutical.
21. The official waters, infusions and decoctions.

Senior Course.

The same general plan will be followed as in the Junior course, the instruction imparted being more advanced in its character. In this

course Magistral Pharmacy will receive special attention. Senior class will meet *Wednesdays, from 1:30 to 4:30 P. M.* Apparatus and material furnished without cost to the student, but implements that are broken or injured to be replaced.

SYLLABUS.

1. Outline of the U. S. Pharmacopœia. Galenical pharmacy—Pharmaceutical solutions, aqueous, acetous, alcoholic, hydro-alcoholic, saccharine, glycerine, oleic acid and ethereal.
2. Outline continued. Solids—For internal use, consisting of pulveres, triturationes, oleosacchara, confectiones, massæ, trochisci, pilulæ, tablettæ, extracta, abstracta, resinæ and "resinoids."
3. Outline continued. Solids—For external use—Unguenta, cerata, emplastra, chartæ and suppositoria.

SOLIDS FOR INTERNAL USE.

4. Pulveres, preparation, dividing, cachets, gelatin capsules, hard and elastic, filling capsules. The official powders.
5. Triturationes, oleosacchara, confectiones and massæ.
6. Trochisci, pastilles, ovoids, bacilli; the official troches.
7. Pilulæ, massing; liquid and solid excipients; coating, varnishing, silvering, sugar, gelatin, keratin and salol.
8. Tablettae, tablet triturates and compressed tablets.
9. Extracta—Methods of preparation, physical character and preservation. Abstracta, resinae and resinoids.

SOLIDS FOR EXTERNAL USE.

10. Unguenta, bases. Ointments made by fusion, admixture and chemical reaction. Preservation and dispensing. The official ointments.
11. Cerata—Origin and mode of preparation. The official cerates. Emplastra—Plasters proper, resinous plasters, spreading and perforation. Chartae.
12. Suppositoria—Bases, hand rolled, moulded, compressed, various moulds and machines. Suppository capsules and hollow cacao butter suppositories.

13 and 14. Toxicology—Poisons and their classifications, corrosives, irritants, neurotics and gaseous poisons. The principal poisons, with their treatment and antidotes.

15. The newer remedies and synthetical compounds.
16. Liquores—Simple and chemical.
17. Syrupi—Simple, medicated and flavored, with their methods of preparation.

18. Mellita—Commercial, clarified and medicated honeys. Elixiria. Mucilagines. Aceta.
19. Glycerinum and the glycerita. Ethereal solutions—Collodia. Pyroxylon—Its preparation, uses, etc.
20. Spiritus—First, simple solution; second, gaseous solution; third, maceration; fourth, chemical reaction; and fifth by distillation. Vina medicata.
21. Tincturæ—Menstruum, strength, preparation; by percolation, maceration, solution and digestion. Preservation. Tincturæ herbarum recentium.
22. Extracta Fluida—Menstruum. Preparation—Percolation with partial evaporation; percolation, with incomplete exhaustion; re-percolation, maceration with hydraulic pressure; maceration and percolation in vacuo. Classification of the officinal fluid extracts. Succi.
23. Oleata—Preparation by solution and by chemical reaction. Oleoresinæ—Various methods of preparing them.
24. Mixtures—Linimenta and misturæ.
25. Emulsiones—Theory of emulsification, Continental, English and other methods, various emulsifying agents; emulsification of special drugs; the emulsa.

DISPENSING LABORATORY.

PROFESSOR CHARLES A. SEIFERT, Director.

SYLLABUS.

This laboratory will not be in operation till the opening of the second half of the term, i. e., after the July vacation.

This will allow the accumulation of matters of interest and material to aid in the usual work of dispensing, so that the student will be clearly taught the continuity of the study in the various departments from the opening to the close of the term.

In this laboratory the many intricacies of dispensing as met with in large cities will be brought to the notice of the student and clearly explained. The work will begin with dispensing of the simplest character—advancing through all the steps in each case, to the operations requiring decided skill. No step will be overlooked, and as every student will be obliged to do the work personally, he will be expected to master every detail.

MATERIA MEDICA.

Lectures and Demonstrations by

PROFESSOR WILLIAM M. SEARBY.

Junior Course.

Lectures are delivered to the Junior Class on Mondays and Wednesdays, from 9 to 10:30 A. M., and begin by referring to drugs derived from the vegetable kingdom. These are taken up according to the Natural Orders of the plants from which they are obtained. A description of the parts of the plants used and officially recognized is given, and also their physical properties, uses and doses. The student is required to examine the most important crude drugs as the lecture proceeds. Specimens of these are furnished by the college.

Their source, period of collection, selection as to quality, manner of preserving and commercial history are referred to. The latter part of the term is devoted to the study of the drugs of animal origin officially recognized. They are fully considered as to their source, description, mode of collection, constituents, medicinal properties, doses and preparations.

SYLLABUS.

1. Introductory: What is Materia Medica? How viewed by physicians and by pharmacists. Organic and inorganic—vegetable and animal drugs. How shall we study them? Why inquire into their source, habitat, collection, preservation, etc.? Their identification, quality, composition, uses in pharmacy and medicine and their doses.
 Classification of vegetable drugs according to origin.
 Latin names of plants and their significance.

VEGETABLE DRUGS.

1. *Ranunculaceæ:* Pulsatilla, hydrastis.
2. Staphisagria, aconitum, cimicifuga.
3. *Magnoliaceæ:* Illicium.
4. *Menispermaceæ:* Calumba, cocculus, menispermum, pareira.
5. *Berberidaceæ:* Berberis, caulophyllum, podophyllum.
6. *Papaveraceæ:* Opium.
7. Other products of papaver somniferum; sanguinaria, chelidonium.
8. *Cruciferæ:* Sinapis.
9. *Polygalaceæ:* Senega, krameria.
10. *Guttiferæ:* Cambogia.
11. *Malvaceæ:* Althæa, malva, gossypium.
12. *Sterculiaceæ:* Oleum theobromæ, cola.
13. *Linaceæ:* Linum, coca.

14. *Zygophyllaceæ:* Guaiacum.
15. *Geraniaceæ:* Geranium.
16. *Rutaceæ:* Buchu, xanthoxylum, pilocarpus.
17. Citrus aurantium, limonum, etc.
18. *Simarubaceæ:* Quassia.
19. *Burseraceæ:* Myrrha.
20. *Celastrineæ:* Euonymus.
21. *Rhamnaceæ:* Rhamnus catharticus, Frangula and Purshiana.
22. *Ampelideæ:* Uva passa.
23. *Sapindaceæ:* Guarana.
24. *Anacardiaceæ:* Toxicodendron, rhus glabra, mastiche.
25. *Leguminosæ:* Scoparius, tragacantha, glycyrrhiza, physostigma.
26. Kino, santalum, chrysarobinum, balsamum tolutanum, balsamum peruvianum, hæmatoxylon, cassia fistula.
27. Senna, tamarindus, copaiba, catechu, acacia.
28. *Rosaceæ:* Amygdala, prunus virginiana, quillaja, rubus Idæus et villosus, kousso, rosa, cydonium.
29. *Hamamelidaceæ:* Hamamelis, styrax.
30. *Myrtaceæ:* Oleum cajeputi, eucalyptus, oleum myrciæ, caryophyllus, pimenta.
31. *Lythraceæ:* Granatum.
32. *Cucurbitaceæ:* Colocynthis, bryonia, megarrhiza, pepo, citrullus.
33. *Cactaceæ:* Cactus grandiflora.
34. *Umbelliferæ:* Conium, anisum, carum, fœniculum, anethum, apium, petroselinum, coriandrum, cuminum.
35. Sumbul, assafœtida, ammoniacum, galbanum.
36. *Caprifoliaceæ:* Sambucus, viburnum prunifolium et opulus.
37. *Rubiaceæ:* Ipecacuanha, coffea, cinchona.
38. Cinchona—continued.
39. *Valerianaceæ:* Valeriana.
40. *Compositæ:* Eupatorium, grindelia, inula, anthemis, matricaria.
41. Pyrethrum, tanacetum, absinthium, santonica, arnica, calendula, lappa, taraxacum, lactucarium.
42. *Lobeliaceæ:* Lobelia.
43. *Ericaceæ:* Uva ursi, gaultheria, chimaphila.
44. *Sapotaceæ:* Gutta percha.
45. *Styraceæ:* Benzoinum.
46. *Oleaceæ:* Oleum olivæ, manna.
47. *Apocynaceæ:* Apocynum, strophanthus, aspidosperma.
48. *Asclepiadaceæ:* Asclepias.
49. *Loganiaceæ:* Gelsemium.
50. Spigelia, nux vomica.
51. *Gentianaceæ:* Chirata, gentiana.
52. *Hydrophyllaceæ:* Yerba Santa.
53. *Convolvulaceæ:* Jalapa, scammonium.
54. *Solanaceæ:* Dulcamara, capsicum, belladonna, stramonium, hyoscyamus, tabacum.

55. *Scrophulariaceæ:* digitalis, leptandra.
56. *Labiatæ:* Lavandula, mentha, origanum, thymus, hedeoma, salvia, rosmarinus, scutellaria, marrubium.
57. *Chenopodiaceæ:* Chenopodium.
58. *Phytolaccaceæ:* Phytoccacæ bacca and radix.
59. *Polygonaceæ:* Rheum, rumex.
60. *Aristolochiaceæ:* Serpentaria.
61. *Piperaceæ:* Cubeba, matico, piper.
62. *Myristicaceæ:* Myristica.
63. *Lauraceæ:* Cortex cinnamomi, cassia, camphora, sassafras.
64. *Thymelaceæ:* Mezereum.
65. *Santalaceæ:* Oleum santali.
66. *Euphorbiaceæ:* Kamala, cascarilla, oleum tiglii, oleum ricini, stillingia, elastica.
67. *Urticaceæ:* Ulmus, humulus, cannabis, ficus.
68. *Juglandaceæ:* Juglans.
69. *Cupuliferæ:* Quercus, galla, castanea.
70. *Salicaceæ:* Salix, salicinum.
71. *Coniferæ:* Juniperus, sabina.
72. Turpentines, pitches, resina, creasotum, oleum succini.
73. *Orchidaceæ:* Vanilla, cypripedium.
74. *Scitamineæ:* Cardamomum, zingiber.
75. *Iridaceæ:* Iris, crocus.
76. *Liliaceæ:* Sarsaparilla, aloe, allium, scilla, convallaria, colchicum, veratrum.
77. *Aroideæ:* Calamus.
78. *Graminaceæ*: Amylum, maltum, saccharum, triticum, zea.
79. *Lycopodiaceæ:* Lycopodium.
80. *Filices:* Aspidium.
81. *Algæ:* Chondrus, fucus.
82. *Lichenes:* Cetraria.
83. *Fungi:* Ergota, ustilago.

ANIMAL DRUGS.

84. *Class Insecta:* Cantharis, cera alba and flava, mel, coccus.
85. *Class Pisces:* Ichthyocolla, gelatin, oleum morrhuæ.
86. *Class Aves:* Ovum, albumin and other proteids.
87. *Class Mammalia:* Moschus, castoreum, fel bovis, sevum, saccharum lactis, carbo animalis.
88. Cetaceum, adeps, glycerinum, adeps lanæ.
89. Pepsinum, pancreatinum.

Senior Course.

Lectures to the Senior Class are delivered on Mondays and Wednesdays, from 10:30 A. M. to 12 M.

Drugs are studied *comparatively* and in groups, points of resemblance and difference being shown, thus training the student in the observation of those characteristics by which the identity of each article may be established, its quality approximately judged, and substitutions and adulterations detected.

The details of pharmaceutical manipulations being dependent upon a knowledge of the *chemical composition* of the various drugs operated upon, a large portion of these lectures is devoted to this part of the subject, certain typical drugs being dwelt upon exhaustively, while others are considered in a less detailed manner.

Towards the close of the term the new synthetical remedies are studied, their chemical constitution, properties, uses and doses being carefully noted.

SYLLABUS.

1. *Roots*—Sarsaparilla, senega, gentiana.
2. Taraxacum, cichorium, pyrethrum, inula, lappa.
3. Apocynum, stillingia, sumbul, asclepias, phytolacca, althea.
4. Belladonna, bryonia, calumba.
5. Rheum, glycyrrhiza, ipecacuanha.
6. Gelsemium, pareira, krameria. *Rhizomes*—Aspidium.
7. Zingiber, calamus, veratrum.
8. Iris versicolor, cypripedium, sanguinaria, geranium.
9. Podophyllum, valeriana, arnica.
10. Serpentaria, spigelia, hydrastis, caulophyllum.
11. Cimicifuga, leptandra, menispermum.
12. *Tubers and Bulbs*—Jalapa, aconitum.
13. Colchicum, scilla.
14. *Woods*—Quassia, hæmatoxylon, santalum.
15. *Barks*—Cinchona.
16. Prunus virginiana, viburnum opulus et prunifolium.
17. Quercus, granatum, frangula.
18. Cascara sagrada.
19. Sassafras, cinnamomum, ulmus.
20. Quillaja, euonymus, juglans, xanthxoylum, mezereum.
21. Gossypium, cascarilla.
22. *Herbs*—Chondrus, cetraria, pulsatilla.
23. Eupatorium, grindelia, lobelia, mentha, absinthium, tanacetum.
24. Thymus, hedeoma, cataria, marrubium, chirata.
25. *Leaves and Leaflets*—Pilocarpus, eucalyptus, uva ursi, senna, buchu, coca.
26. Belladonna, stramonium, hyoscyamus, digitalis.
27. Matico, salvia, hamamelis, chimaphila, gaultheria.
28. *Leafy Tops*—Sabina, scoparius.

29. *Inflorescences, Flowers and Petals*—Cannabis, santonica, kousso, arnica, calendula, matricaria, anthemis, caryophyllus, sambucus.
30. *Fruits*—Cubeba, piper, pimenta, cocculus, capsicum.
31. Colocynthis, cassia fistula, humulus.
32. Xanthoxylum, illicium, cardamomum.
33. Coriandrum, conium, anisum, petroselinum, apium, carum, fœniculum.
34. *Seeds*—Physostigma, dipteryx, theobroma, cola.
35. Sinapis, nux vomica, staphisagria, asagrœa.
36. Myristica, stramonium, colchicum.
37. *Unclassified parts of Plants, etc.*—Lycopodium, kamala, galla, ergota.
38. *Inspissated Juices and Extracts*—Guarana, opium, lactucarium.
39. Aloe, catechu, kino, elastica.
40. *Sugars, &c.*—Saccharum, saccharum lactis, manna, mel, amylum.
41. *Gums and Gum-Resins*—Acacia, tragacantha, cambogia, asafœtida ammoniacum, myrrha, scammonium.
42. *Resins, Oleo-Resins and Balsams*—Mastiche, guaiaci resina.
43. Benzoinum, balsamum peruvianum et tolutanum, styrax, copaiba.
44. Terebinthina, terebinthina canadensis, pix burgundica, pix canadensis, pix liquida.
45. *Fixed Oils and Fats*—Oleum morrhuæ, oleum tiglii, oleum theobromæ,
46. Oleum ricini, oleum adipis, oleum lini, oleum amygdalæ, oleum olivæ.
47. Oleum cocois, adeps, adeps lanæ, cetaceum cera.
48. Cera, paraffinum.
49. *Synthetical Remedies*—Salol, salicylic acid, acetanilid, sulphonal.
50. Antipyrin, phenacetin, piperazine.
51. Naphtalin, naphtol, resorcinum, ichthyol.
52. Iodol, aristol, etc.

BOTANY.

Lectures and Demonstrations by

PROFESSOR J. J. B. ARGENTI.

The junior class receive instruction in this study Monday from 10:30 to 12 A. M.

The course consists of a systematic series of lectures, supplemented by demonstrations with fresh and dried material, and by excursions in the field, where plants are studied under their natural conditions, thus making the instruction of practical value to the student.

The morphology of plants is entered into, attention being devoted principally to the higher forms of plants.

Organography is dwelt upon ; the terms employed in describing the parts and organs of plants are explained.

Organography gradually leads to the consideration of systematic botany or classification.

Under this head the several systems of classification will be explained and the characters of the more important families will be considered.

Students are required to make comparative studies of plants, their parts and organs, employing when necessary the simple microscope to aid them in dissections and investigation.

SYLLABUS.

1. Divisions of Botany. Explanation and demonstration of vegetative and floral parts.
2. The flower. Classification of flowers.
3. Inflorescence and its classification.
4. Parts of the flower; calyx and corolla, their modifications.
5. Perianth and subsidiary organs.
6. Androecium, (stamens). Pollen.
7. Gynæceum. (Pistil.) Simple and compound pistils. Ovules. Fertilization.

8—9—10. Fruit. Structure. Kinds and classification.

11. Seed. Structure. Character of mono, di- and polycotyledonous seeds.
12. Root. Kinds.
13. Stem. Modification and characters.
14. Buds. Aestivation and vernation.

15—16—17. Leaf. Simple and compound foliage leaves. Transitional forms. Modifications. Classifications of leaves.

18—19. Cryptogams. Characters and classification.

20. Systems of botanical classification.

21—26. General arrangement and consideration of characters of the divisions and families of phanerogams.

MICROSCOPY, VEGETABLE HISTOLOGY AND PHARMACOGNOSY.

Lectures and Demonstrations by

PROFESSOR J. J. B. ARGENTI.

Junior Course.

The junior course includes microscopy and vegetable histology.

Instruction is given on Fridays, from 9:00 to 10:30 a. m.

The first part of the term is devoted to the principles of magnification, use of simple lenses, as magnifiers, the construction of and princi-

ples involved in the parts and accessories of the compound microscope, and the manipulation and care of the instrument.

Next will be explained the manner of preparing fresh and dried material for sectioning, staining, mounting, etc.

Laboratory work will be done following lectures and demonstrations, whereby practice may be had in the various processes.

The second part of the term is devoted to instruction in vegetable histology. It includes the vegetable cell, its contents, the epidermal, fundamental and fibrovascular series of tissues, structure of cellular plants, structure of root, stem, leaf and seed of the higher plant forms, and the various processes of cell formation.

It is intended that this course be practical, the student being compelled to devote a portion of the time to laboratory practice is enabled to become familiar with the manipulation of dissecting and compound microscopes, preparation of material for investigation, etc.

A projection apparatus fitted with microscopic projecting attachment is used from time to time to make more clear the lectures. Sections of plants illustrating the various tissues, systems and organs of plant-anatomy are projected on the screen and explained by the lecturer.

By successive steps progress is made toward the completion of the course and the advanced study of vegetable histology.

When found necessary the class is divided into sections in order that each student may obtain all the practice and benefit possible.

SYLLABUS.

Section I, Microscopy.

1. Introduction, magnification, lenses, use of lenses as magnifiers.
2. Faults in lenses, correction of lenses, simple microscope, compound microscope, its construction, parts and uses.
3. The eye piece. The objective.
4. Various accessories employed with the compound microscope.

5 to 10. Preparation of material for preserving, sectioning, staining materials, staining of sections, mounting and finishing, temporary and permanent.

11. Drawing and photo-micrography.

Section II, Vegetable Histology.

12. The vegetable cell and its contents.
13. The cell wall, structure, markings and modifications.

14—15. Contents of cells, plastids, protein grains, inulin crystals, etc.

16. Starches.
17. Various processes of cell formation.
18. Modification of cells. Classification.
19. Epidermal system.

20. Fundamental system.
21. Fibrovascular system.
22. Sieve and latex systems.
23. Construction of fibrovascular bundles. Closed bundles; open. Collateral, bi-collateral, concentric and radial.
24 to 26. Histology of root, stem, leaf and seed.

Senior Course—Pharmacognosy.

Lectures and demonstrations are given on Mondays, 9:00 to 10:30 and Fridays from 10:30 to 12:00.

This course includes the application of the compound microscope in studying drugs of vegetable origin.

The parts of plants supplying drugs receive attention. The varieties, general and special characters and structure of each is considered, as well also the substitutes, adulterants and admixtures.

Official drugs, crude or entire and in powder receive special attention. Type slides of each are supplied to the student for study of structure, etc.

Laboratory work consisting in preparation of mounted specimens, investigation with simple and compound microscope, detection of substitutes and adulterants, is followed throughout the term.

The projection apparatus is employed to illustrate the more important subjects treated of.

SYLLABUS.

1 to 8. *Roots and Rootlets.* Primary and secondary. Structure. Monocotyledons—Sarsaparilla (varieties). Dicotyledons—senega, gentiana, taraxacum, cichorium, pyrethrum, inula, stillingia, phytolacca, lappa, apocynum cannabinum, asclepias, sumbul, althæa, belladonna, bryonia, calumba, rumex, rheum, ipecac, pareira, krameria, gelsemium.

8 to 13. *Rhizomes and Rootlets*—Characters and comparative structure of cryptogamous, monocotyledonous and dicotyledonous rhizomes Cryptogamous rhizomes—Aspidium. Monocotyledonous rhizomes—Zingiber (varieties), curcuma, calamus, veratrum album, veratrum viride, iris florentina, iris versicolor, triticum, cypripedium, convallaria, dioscorea. Dicotyledonous rhizomes—Sanguinaria, geranium, podophyllum, valeriana, arnica, serpentaria, spigelia, hydrastis, caulophyllum, cimicifuga, asarum, leptandra, menispermum.

14 to 18. *Tubers, Bulbs and Corms*—General and structural characters. Monocotyledons—Colchicum, scilla, allium. Dicotyledons—Jalapa, aconitum.

16 and 17. *Twigs and Woods*—Twigs: dulcamara, scoparius. Woods: quassia, hæmatoxylon, sassafras, guaiacum, santalum album, santalum rubrum.

18 to 21. *Barks*—General characters. Cinchona (varieties), prunus virginiana, berberis, quercus, granatum, rubus, frangula, rhamnus Purshiana, juglans, quebracho, xanthoxylum, mezereum, gossypii radix, viburnum, euonymus, quillaja, cinnamomum (varieties), sassafras.

22 to 27. *Herbs and Flowers* — Cryptogams—Chondrus, fucus, cetraria. Dicotyledons — Caryophyllus, arnica, pulsatilla, cannabis indica, lobelia, mentha piperita, mentha viridis, hedeoma, marrubium, grindelia, matricaria, cannabis indica, anthemis, tanacetum, calendula, origanum, chirata, sabina, absinthium.

28 and 32. *Leaves and Leaflets*—Rosmarinus, pilocarpus, eucalyptus, uva ursi, senna (varieties), erythroxylon, belladonna, tabacum, stramonium, hyoscyamus, digitalis, matico, salvia, hamamelis, castanea, gaultheria, buchu (varieties), chimaphila, eriodictyon, aconitum, toxicodendron, ruta, conium.

33 to 37. *Fruits*—Juniperus, humulus, rhamnus catharticus, rhus glabra, cubeba, piper (varieties), pimenta, anisum, carum, foeniculum, coriandrum, cocculus, capsicum, colocynthis, cassia fistula, ceratonia, papaver, illicium, cardamomum, vanilla, cannabis, granati fructus et cortex, hordeum.

38 and 42. *Seeds*—Cydonium, amygdala (varieties), pepo, theobroma, cola, physostigma, sinapis (varieties), nux vomica, ignatia, delphinium staphisagria, linum, strophanthus, ricinus, tiglium, stramonium, hyoscyamus, sabadilla, colchicum, myristica.

43 to 46. *Drugs not Distinct Organs of Plants*—Ustilago, ergota, sassafras medulla, macis, gossypium, crocus, stigmata maidis, fungus laricis, lupulinum, mucuna, kamala, lycopodium, galla, guarana, kino, benzoin, aloe, lactucarium, tragacantha, acacia.

47 to 50. *Starches*—Wheat, potato, sago, tapioca, barley, oat, pea, bean, corn, rice, etc.

PHYSIOLOGY.

C. Hadley Carlson, M. D., Lecturer.

This course is intended to give the student an outline of the general principles of physiology, in order that he may have an intelligent idea of the action of medicines.

SYLLABUS.

1. Physiology defined. Elementary principles of physiology. Physiology of digestion.

2. Physiology of digestion concluded.
3. The blood and the secretions.
4. Physiology of excretion.
 (*a*) The kidneys.
 (*b*) The skin.
 (*c*) The lungs.
 (*d*) The gastro intestinal canal.
5. Physiology of the nervous system.
6. Physiology of the nervous system concluded, with particular reference to the special senses.

PHARMACEUTICAL JURISPRUDENCE.

H. R. WILEY, A. B., LECTURER.

1. Nature, sources and scope of Pharmaceutical Jurisprudence. The practical application of legal principles by the pharmacist. Discussion of the terms Apothecary, Druggist, Pharmacist. The limits of pharmacy.
2. Legal status of the pharmacist. Acquirement of legal right to practice pharmacy; proof of such right in a court of law.
3. Qualifications of pharmacist. Contractual relations between vendor and vendee of drugs; between pharmacist and the person at whose request he prepares a prescription. The degree of skill required of the pharmacist.
4. Liability of the pharmacist—civil, criminal. Ignorance. Negligence.
5. Defenses to criminal prosecutions. Defenses to civil suits for damages Contributory negligence.
6. Discussion of the ownership of the physician's prescription. Safeguards.

THE COLLEGE CALENDAR—1896.

April 14—Tuesday, preliminary examination and matriculation.
April 17—Friday, opening of the College, assignment of seats and desks.
April 20—Monday, Junior and Senior work begins.
July 4 to July 11—Vacation.
Oct. 23—Friday, close of College work; tickets issued by Dean for final examinations.
Oct. 26—Monday, Final Junior examinations begin.
Oct. 28—Wednesday, Final Senior examinations begin.

TEXT AND REFERENCE BOOKS.

U. S. Pharmacopœia, 1890.

Organic Materia Medica, by J. M. Maisch.

Helbing's Modern Materia Medica.

U. S. Dispensatory, by Wood, Remington and Sadtler.

National Dispensatory, by Stillé and Maisch.

Simon's Chemistry.

Sadtler and Trimble's Medical and Pharmaceutical Chemistry.

Remington's Practical Pharmacy.

Heebner's Manual of Pharmacy.

Coblentz's Handbook of Pharmacy.

Oldberg's Home Study in Pharmacy.

Thome's Botany.

Bastin's College Botany.

Behr's Flora of the Vicinity of San Francisco.

Microscopical Methods, by S. H. Gage.

Attfield's Pharmaceutical Chemistry.

Trimble's Practical and Analytical Chemistry.

Remsen's Organic Chemistry.

Richter's Organic Chemistry.

Elliott and Storer's Quantitative Analysis.

Thorpe's Quantitative Analysis.

In consequence of the delay which has frequently occurred in obtaining Text Books through the usual trade channels, the Alumni Association have arranged to import a full supply for the use of our Students. For particulars, as to cost, etc., apply to

E. P. Gates,
100 Stockton Street.

FEES.

To be paid in advance.

*Entrance Examination	$ 5 00
Junior Course	90 00
Senior Course	90 00
Diploma Fee to be paid but once, and not refunded in case of failure	20 00
Certificates of Proficiency, each	2 00

Each student is required to deposit with the Dean the sum of $15.00 for the breakage and damage fund. Any unexpended portion of this amount will be refunded at the close of the session.

*Those who present satisfactory credentials do not pay this fee.

EXAMINATIONS.

Periodical examinations are held from time to time during the session in each of the subjects taught by the several Professors.

The written answers at these examinations are preserved until the end of the session, and are rated by the Examining Committee of the Board of Trustees; the average rating of students, as shown by the results thus obtained, constitute important factors in determining the relative fitness of Juniors for promotion to the Senior class, or of Seniors who are candidates for graduation.

Attendance upon these examinations is compulsory. Any student unavoidably detained from being present is required to deliver to the Dean a statement in writing of the cause of his detention.

JUNIOR EXAMINATION.

(For Admission to the Senior Class.)

Junior students, whose rating shows satisfactory progress, receive certificates entitling them to admission to the Senior Class at any subsequent session of the College within three years.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, are required to produce evidence of their fitness *or to pass an examination.*

MODIFIED JUNIOR EXAMINATION.

In consequence of the limited time that many students have for study while employed in stores, some of them are not able to do the necessary amount of home study in all the courses at the same time. In order to meet the circumstances of such students, and at the same time to discourage cramming, the Trustees have made arrangements for a Modified Junior Examination.

A student in the Junior Class may, at the end of this course, select of the parts into which the Junior Examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, Microscopy,) any number, not less than three, in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before October first. If he pass in all the branches selected by him, the results will be placed to his credit; and at the close of the following term he may present himself for examination in the remaining branches, and if he pass also in these, he will be entitled to enter the Senior Class. *But no student will be allowed to enter the Senior Class, in any branch, until he shall have passed in all the branches of the Junior Class.* If, at the first partial examinaion he should fail in any branch selected, he will be re-examined in this branch also during his second year as Junior.

The student who elects to divide his examination in this way, may attend the second year as well as the first without the payment of additional fees.

SENIOR EXAMINATION.

Students in the Senior Class are examined for the degree of Graduate in Pharmacy, at the end of the session, in Organic and Inorganic Chemistry, Toxicology, Structural and Systematic Botany, Materia Medica, Physiology, Chemical and Microscopical Characteristics of Drugs, their doses and uses; Microscopy and Vegetable Histology, Theoretical and Practical Pharmacy, Pharmaceutical Jusisprudence and the Translation of Prescriptions. The practical examination includes the actual compounding of Prescriptions, and the identification and manipulation of Drugs and Chemicals, in the presence of the Examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least *two full courses*, may, at the end of the Senior Course, present himself for examination in CHEMISTRY, BOTANY, MICROSCOPY, and MATERIA MEDICA, (including the identification of specimens,) reserving the remainder of his examination (THEORETICAL and PRACTICAL PHARMACY, and "COMMITTEE") until a subsequent year. He must give notice, in writing, to the Dean, on or before October 1st, of his intention to so divide his examination. If he pass in two or all these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the Degree of Graduate in Pharmacy.

IN BOTH SENIOR AND JUNIOR CLASSES.

Students who take the entire examination at the close of the term, and fail in more than two branches, are required to remain another year in the same class, and to pass the examination in all branches at the end of the term. No additional fee is charged unless the student enters a third term in either class.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency will be issued to those students who, having elected to take the modified senior examination, shall have passed satisfactorily in *all of the branches* in which they were examined; also to special students who pass satisfactorily in their special subjects; also to those candidates who pass successfully in all branches, but are debarred from receiving their diplomas by lack of required experience, or by being under twenty-one years of age. These certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Trustees and Examiners that the candidate has had at

least three and a half years' experience in a pharmacy where prescriptions are compounded. No Certificate of Proficiency in Pharmacy will be issued, unless the student has satisfactorily passed in all the branches. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subjects as is required in the general average.

These certificates will be issued, when desired, upon the payment of two dollars each.

THE FEES must be paid to the Dean by each student, in person, in advance, or not later than thirty days from the opening of the term.

GRADUATES of the College, are privileged to attend at any future time.

Other students not intending to pursue Pharmacy as their vocation will be admitted to any of the courses they may desire to attend, by paying $5.00 entrance fee, and that of the chair or chairs of instruction which they wish to attend.

CONDITIONS OF GRADUATION.

Every person upon whom the Degree of Graduate in Pharmacy shall be conferred must fulfill the following conditions:

1. He must be of good moral character.
2. He must have attained the age of 21 years.
3. He must have attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy.
4. He must have had four years' experience in a pharmacy where physicians' prescriptions are compounded. (His time actually spent in this College will be allowed to count as part of this term of four years.)
5. He must present an account of some special work done in the Laboratory in lieu of a thesis, and exhibit some chemical or pharmaceutical product made under the supervision of the Directors of the Laboratories.
6. He must have attended at least three-fourths of the lectures, reviews and laboratory work.

No special examination will be held for candidates for the Degree, but only that at the end of the regular course.

Those who fail to pass satisfactorily will be allowed to present themselves again within two years, without further charge.

Candidates are recommended jointly by the Faculty and Examining Board to the Regents of the University, by whom the Degree is conferred.

RULES.

1. Students on entering must sign the roll, and subscribe to the rules of the College.
2. Fees must be paid at the opening of the session.
3. Students not answering to roll-call 15 minutes late will be marked absent.
4. To obtain a lecture certificate from the Professor, attendance is compulsory, unless exempted for sickness or special cause by the Board of Trustees.

5. Seats and sections in the lecture rooms and laboratory will be assigned to each student, which he must occupy during the session.

6. Each Student will be held responsible for any damage, or breakage to his seat or section, whether done by himself or others.

7. Any Student found willfully damaging or wasting the property of the College is liable to expulsion and fine.

8. Any Student who misbehaves in the class-room or elsewhere in the College building, or who refuses to make good any damage to College property, will be subject to immediate dismissal.

9. Students will not be allowed to loiter around, or impede the public highway in front of the College entrance.

10. Smoking on the premises is prohibited.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the College, and upon complying with all the requirements for graduation, (other than a four years' experience in the retail drug business,) may receive a Certificate of Proficiency in Chemistry, Materia Medica, Microscopy and Botany, signed by the Faculty of the College.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are allowed one year in the Medical Department of the University of California, and in the Cooper Medical College.

ALUMNI ASSOCIATION.

The Alumni Association of the California College of Pharmacy was organized in 1882, to further the interests of the College and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College.

The annual meeting is held in November.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 to 40 cents. Single furnished rooms may be had without board, for from $5 to $10 per month.

EMPLOYMENT.

Situations as relief clerks while attending College may be obtained in drug stores, but the remuneration for such services is not great. Yet many of the students prefer to do some work of this kind during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influences to find employment for them.

GRADUATING CLASS, 1895.

Charles Jacob Abraham
Richard Jones Baily, M. D.
Charles Alfred Bayly, Jr.
Frank Charles Becker
Joseph Hildreth Brown
John Francis Christopher
Harold Skinner Cottle
J. Wirt Cummins
Cornelius William Dore
Franklin Thomas Duncan
Charles Devans Fairbanks
Carl Torvald Lauritz Gydison
George Walter Hawkins, M. D.
Pratt Cook Inman
Adial Sabin Jones
Joseph Louis Lengfeld
Henry Milton McQueen
Harry Louis Miller
Leo Munter
John Crockett Newton
Silvio Joseph Onesti
Walter Corwyn Powell
Charles Christopher Rubel
Haydn Mozart Simmons
Frederick George Ullman
Nicolas Roberto de Urunuela

STUDENTS—SESSION OF 1895.

Senior Class.

Name.	Nativity.
Abraham, Charles Jacob	San Francisco
Bowen, Daisy May	San Francisco
Brown, Joseph Hildreth	Oakland, Or.
Bayly, Charles Alfred	San Francisco
Baily, Richard Jones, M. D	San Francisco
Becker, Frank Charles	Merced
Clayes, Wellington Irving	Stockton
Crowley, John Joseph	San Francisco
Cook, George Alfred	San Francisco
Christopher, John Francis	Los Angeles
Cummins, J. Wirt	Oroville
Cottle, Harold Skinner	San Jose
Dore, Cornelius William	Berkeley
Duncan, Franklin Thomas	San Francisco
Ellis, Linnaeus Thomas	Elsinore
Fairbanks, Charles Deavans	Tustin
Hawkins, George Walker, M. D	San Francisco
Jackson, John Henry	Stockton
Inmam, Pratt Cook	San Rafael
Jackson, William John	Oakland
Lengfeld, Joseph Louis	San Francisco
Miller, Harry Louis	Jacksonville, Or.
McQueen, Henry Milton	San Francisco
Munter, Leo	San Francisco
Norton, John	San Luis Obispo
Noe, George Thomas	Auburn
Onesti, Silvio Joseph	San Francisco
Powell, Walter Corwyn	San Francisco
Quigley, George Henry	San Francisco
Rubel, Charles Christopher	Marysville
Reynolds, Helen Grace	Upper Lake
Simmons, Haydn Mozart	San Francisco
Uruñuela, Nicholas Roberto de	San Francisco
Ulman, Frederick George	Elk Grove

Junior Class.

Angell, Harry Millington	San Francisco
Atkinson, Frank James	San Francisco
Archer, John Jr	Salinas
Apel, Friedric Edmund	Fruitvale
Bowen, Daisy May	
Bowen, Thomas John Dewsnap	Oakland
Briggs, Armand Eugene	Hollister
Barnett, James Henderson	Henderson, Ky.
Briggs, Walter David	Oakland
Barnickel, Bernhard	Chico
Bowman, Reginald Hamilton	San Francisco
Bernheim, Leo Julius	Santa Cruz
Bridgewater, Edgar	Watsonville
Beck, Ignatius	San Francisco
Crozier, Orlando Paine	Tustin
Campodonico, Joseph Michael	San Francisco
Cherry, Edward Martin	San Francisco
Coffee, Ernest Haquette	San Francisco

Name.	Nativity.
Chelgren, Andrew Hugh	San Francisco
Crain, Della	Biggs
Dickoff, Bernard Seligman	San Francisco
Dudley, Elizabeth	Dixon
Dibert, Arthur John	Oakland
Duprey, Arthur Edgar	Dixon
Dougherty, William Aloysius	San Francisco
Drennan, Arthur Thomas	Emeryville
Enriquez, Manuel Jr	Los Angeles
Ehrenpfort, Louis August	San Francisco
Ferrea, Emilo Attilio	San Francisco
Gritter, William Cecil	Pacific Grove
Gerichten, Geo. Peter	Oakland
Gleason, Thomas Francis	San Francisco
Geary, Wm. Roberts	Oakland
Gleason, Edward Henry	San Francisco
Hopkins, Walter Vincent	Stockton
Haber, William John	San Francisco
Hanson, Eugene Waldron	San Jose
Hanlon, Edward Russell	San Francisco
Halsell, Oliver Linden	Santa Ana
Houghton, Thaddeus Burton	Tulare
Hollenbeck, Walter Laurey	Pacific Grove
Hogan, Margaret Marie	Vallejo
Kington, Frank Valentine	Santa Clara
Kelley, Thomas Joseph	San Francisco
Kelly, Francis Ignatius	San Francisco
Kiely, Eugene Aloysius	San Francisco
Lanbersheimer, George Ashby	Wilmington
Leavy, Leonard Sumner	Oakland
Logie, Thomas Patrick	San Francisco
Lichthard, George Henry Philip	Sacramento
Large, Chas. Franklin	San Francisco
McMillan, Daniel Newcomb	San Francisco
Moore, Royal T	Stockton
McFarland, Bessie Wallace	San Francisco
McCarty, Elizabeth Mabon	Oakland
Müller, William	Oakland
Minstrell, George William	Lakeport
Parr, Ada Marian	Sebastopol
Plymire, Harry Garritson	San Francisco
Perrone, Darius Leopold	San Francisco
Packscher, Maurice Goodtime	San Francisco
Pierson, Walter Edward	Ferndale
Rock, Peter	Alameda
Rühser, Frederick William	San Francisco
Shaw, George Henry	Eureka
Stark, William Henry	San Francisco
Sheridan, Franklin Jerome	San Francisco
Saunders, William Nelson	Vallejo
Talcott, Lida Louise	San Francisco
Upp, Arthur Frank	San Francisco
Wulzen, Dick John	San Francisco
Wegener, Edward Louis	San Francisco
Wallgren, Wilhelm Edward	San Francisco
Wheeler, Warren Presby	Stockton
Wait, Chas. E	Sacramento
Withers, Geo. Milton	San Francisco
Wilson, James Franklin	Jacksonville, Or
York, Henry Albert	The Dalles

GRADUATES.

Name	Residence	Date of Graduation
Abraham, Chas. J	San Francisco	1895
Adair, William H	San Francisco	1881
Airaldi, August	San Francisco	1892
Aitken, Louis S	Oakland	1890
Argenti, J. J. B	San Francisco	1881
Ayers, Walter W	U. S. Navy	1893
Bacon, Gaston E	San Francisco	1875
Bagley, Hubert F	San Francisco	1893
Bagot, Edward Albert	San Francisco	1892
Baily, Rich J., M. D	San Francisco	1895
Ball, Henry A	Oregon	1884
Ball, Robert L	Oregon	1882
Bandel, Edward F	Pasadena	1894
Barbat, J. H., M. D	San Francisco	1880
Barbat, Josephine E	Alameda	1884
Bare, Edward R. L	San Francisco	1892
Barrington, Charles L	San Francisco	1883
†Bauer, Fred C		1877
Bayly, Jr., Chas. A	San Francisco	1895
Beaizley, George T	San Francisco	1885
Beck, Henry M	San Francisco	1889
Beckett, F. Arthur	San Francisco	1883
Becker, Frank C	Merced	1895
Bernheim, Moses Ralph	San Francisco	1891
Besthorn, H. E. D	San Francisco	1884
Bilger, Frank W	Oakland	1889
Blum, Joseph H	San Francisco	1894
Bodkin, Thomas P., M. D	San Francisco	1887
Bond, Frederick T., M. D	San Francisco	1886
Borchers, Adolph W	San Francisco	1889
Boswell, Frank M	Los Angeles	1886
Bowen, Charles P., M. D	New York	1889
Bowerman, Kenneth B	San Francisco	1893
Bratton, Fred O	San Francisco	1886
Broderick, Daniel J	San Francisco	1894
Brown, Jos. H	San Francisco	1895
Burnett, G. G	San Francisco	1879
Burnett, George W	San Francisco	1893
Bussenius, Adolph G	San Francisco	1888
Calegaris, Joseph	San Francisco	1882
Callender, Ernest G	Los Angeles	1891
Cavagnaro, A. A	San Francisco	1892
Chard, George R	San Francisco	1881
Chilson, Henry G		1891
Christopher, John F	San Francisco	1895
Cleary, Stephen, M. D	Benicia	1890
Chapman, Clarence H	Los Gatos	1893
Cerf, Joseph Leon	San Francisco	1791
Cody, Nelson A	Merced	1881
Cogswell, Frederick	U. S. Navy	1892
Collin, Francis Jesse	San Francisco	1891
Conlan, F. J	Nevada City	1894
Connolly, Thomas W	San Francisco	1894
Cottle, Harold S	San Jose	1895
Cox, Levitt H	San Francisco	1889

†Deceased

Name	Residence	Date of Graduation
Crew, Henry W	Chico	1887
Crowley, Thomas J	San Francisco	1892
Curragh, John M	San Francisco	1887
Cummins, J. W	Oroville	1895
Davis, Thomas H	Oakland	1891
Davis, William J	Oakland	1885
D'Artenay, Eugene	San Francisco	1882
†Delicat, John F. A	San Francisco	1888
Des Marais, Lafayette N	Oakland	1892
Devine, John	Santa Monica	1877
DeWitt, James M	San Francisco	1881
Dick, William H		1884
Dignan, Michael H	Santa Rosa	1883
Donaldson, John G	Oakland	1891
Donnelly, Francis J	Oakland	1893
Dore, C. W	Berkeley	1895
Dorrance, Ralph G		1885
Dowdall, Richard J	San Francisco	1894
Driscoll, Edward P., M. D	San Francisco	1888
Driscoll, Frederick A	San Francisco	1887
Driscoll, Frank I	San Francisco	1891
Drossel, August A., M. D	San Francisco	1886
Drossel, Joseph H	San Francisco	1893
Dubois, Paul A	San Francisco	1880
Dufficy, George W	San Francisco	1893
Duncan, Frank T	San Francisco	1895
Edwards, William	San Francisco	1892
Elwert, Charles P., M. D	New York	1881
Emde, George H	Lodi	1894
Emerson, Horatio B., M. D	San Francisco	1888
Fairbanks, Chas. D	Santa Ana	1895
France, William M	San Francisco	1894
Fevrier, J. P	San Francisco	1881
Fitzell, Charles R	Eureka, Cal	1883
Fitzell, Lincoln	Eureka, Cal	1889
Fletcher, David M	San Francisco	1881
Flint, George E		1888
Folkers, Oscar H	San Francisco	1893
Fox, Jay Ernest	Oakland	1892
Fox, Albert S	Placerville	1889
Gardner, Frank A	Washington	1891
Gates, Emery P	San Francisco	1887
Gerdes, Henry G	San Francisco	1889
Gibson, Martin R	San Francisco	1891
Gienger, Charles J	San Francisco	1892
Gilbride, Philip J	San Francisco	1891
Green, George A	San Jose	1893
Green, Franklin T	San Francisco	1882
Green, John A	Sacramento	1883
Gove, D. M	San Francisco	1881
Graham, Thomas D	San Francisco	1875
Grazer, F. A., M. D	San Francisco	1880
Grossman, Edward L., M. D	San Francisco	1891
Gydison, Carl T. L	Salinas	1895
Hawkins, Geo. W., M. D	San Francisco	1895
Hance, Bowen Forrest	Los Angeles	1891
Hanson, Geo. F., M. D	San Francisco	1892

†Deceased.

Name	Residence	Date of Graduation
Harris, Louis	Fresno	1891
Hawkes, Robert H	Oakland	1892
Hall, Benjamin F.	Palo Alto	1889
Haman, Henry	San Francisco	1887
Hammit, Charles H.	San Francisco	1881
Happersberger, Emil	San Francisco	1882
Hahman, Paul T	Santa Rosa	1885
Harris, Henry R.	San Francisco	1876
Harvey, George J	San Francisco	1889
Hazen, Edward A	Agnews	1894
†Heaney, J. P		1874
Hedrick, Walter M	San Francisco	1893
Heider, Frank B	San Francisco	1889
Heinzeman, Edward A	Los Angeles	1892
Helke, W. S	Sacramento	1878
Henderson, David L	Oakland	1888
Higby, Edward P	Oakland	1894
Higgins, Charles C	San Francisco	1888
Hirst, Charles P	Berkeley	1893
Hoover, Ulysses G	San Francisco	1890
Hueter, Gustave A	San Francisco	1890
Hughes, Samuel F	San Francisco	1886
Hughes, Thomas H., M. D	San Francisco	1886
Hulting, B. F	San Francisco	1880
Hund, George B	San Francisco	1892
Hurtzig, W. F. N	San Francisco	1881
Inman, Thos. G	San Francisco	1892
Ing, John C. Jr	Sacramento	1887
Inman, Pratt C	San Rafael	1895
Janeck, Frederick L		1892
Johns, Thomas Edwin	Los Gatos	1892
†Jones, Morgan L		1883
Joy, Edwin W	San Francisco	1878
Johnson, William P	Los Gatos	1893
Jones, Adial S	Placerville	1895
Judson, Russell H	San Francisco	1882
Kahn, Adolph J., M. D	San Francisco	1875
Keefe, John J		1890
Kelsey, Harry D	Berkeley	1888
Kelsey, John Edson, M. D	Arroyo Grande	1891
Kelton, Julian V	Ukiah	1894
Kellogg, Wilfred H	Oakland	1892
Kidd, Albert J	San Francisco	1894
King, William H. V	Redwood City	1891
Korper, Harry W	San Francisco	1883
Krause, Frederick L	Oakland	1884
Ladd, Henry	San Francisco	1891
Lann, William Henry	San Francisco	1892
Leber, Albert L	Oakland	1884
Leith, H. von der	San Francisco	1893
Leet, Robert Andrew	Oakland	1891
Legge, Robert T.	San Francisco	1891
Leithold, John V	Woodland	1890
Lengfeld, Felix	Chicago	1880
Lengfeld, Jos. L	San Francisco	1895
Levison, Charles G., M. D	San Francisco	1884
Leszynsky, Samuel	San Francisco	1880

†Deceased

Name	Residence	Date of Graduation
La Rue, D. Duke	Stockton	1894
Lichtenstein, Max	San Francisco	1894
Lindsay, Frederick G	San Francisco	1883
Link, Victor A	Mexico	1890
Lovotti, Frederico	San Francisco	1891
Lucchetti, Victor F	San Francisco	1894
Loehr, George W	San Francsico	1884
Logan, M. H., M. D	San Francisco	1887
Lustig, Daniel David, M. D	San Francisco	1881
Maloney, James J	San Francisco	1888
Mardis, Benjamin A., M. D	New York	1890
Mathewson, J. McL		1879
Mayer, Oscar J., M. D	San Francisco	1885
McCarthy, James H	San Francisco	1888
McDonnell, S. A	San Francisco	1878
McKenny, William B	Olympia, Wash	1893
McKenny, Samuel M	Olympia, Wash	1893
McLaughlin, W. H., M. D	San Francisco	1878
†McLean, F. P		1875
McMurdo, John R., M. D	San Francisco	1887
†McNamara, John A		1893
McQueen, H. M	San Francisco	1895
Medros, Joseph J., M. D	Oakland	1890
Mendel, Louis Carl	Antioch	1893
Mervy, Emil C , M. D	San Francisco	1879
Messing, L. J	Fresno	1879
Meyer, August W	Honolulu	1885
Meyers, Robert C., M. D	San Francisco	1875
†Minor, George W		1879
Miller, H. L	Jacksonville, Or	1895
Mohun, Charles C.. M. D	San Francisco	1887
Molony, Edward J	Stockton	1886
Moore, Berkeley W	Stockton	1883
†Moore, C. C		1878
Morgan, Charles L	San Francisco	1886
Morgan, Henry F., M. D	New York	1889
Morrison, W. P	San Francisco	1880
Munson, James G	San Jose	1884
Munter, Leo	Oakland	1895
†Murphy, Martin J		1881
Nash, Bert	San Francisco	1894
Newman, Felix H	Monterey	1891
Newby, Thomas S	Ventura	1884
Newton, John C	San Francisco	1895
Nicholls, Horace S	Healdsburg	1887
Nightingale, Joseph B	San Francisco	1892
Oberdeener, George	Stockton	1884
Oberdeener, Samuel	Santa Clara	1880
O'Grady, James J	U. S. Navy	1891
O'Neil, Ambrose E	San Francisco	1889
Olds, George L	Willows	1891
Onesti, S. J	San Francisco	1895
Orena, Arthur G	Sacramento	1887
Painter, George L	San Francisco	1892
Parker, E. S	Sacramento	1878
Parker, Scollay, M. D	San Francisco	1893
Patton, William J		1885

†Deceased

Name	Residence	Date of Graduation
Patterson, Frank F	San Francisco	1891
Peck, Samuel S., B. S	San Francisco	1892
Perkins, Philip J	San Francisco	1887
Petrie, Frank B., M. D	San Francisco	1888
Pooler, Chester B	Santa Rosa	1892
Polk, Charles W	Watsonville	1892
†Potter, Grace M		1892
Potter, Frank L	Oakland	1894
Powell, W C	San Francisco	1895
Preuss, John	Marshfield, Or	1892
Prien, Harry F	San Francisco	1885
Prosser, Sanford S	Philadelphia	1791
Puck, Richard F	Crescent City	1894
Ralston, Frank W		1888
Ray, Fred E	Sacramento	1876
Rees, David R	Livermore	1892
Reilly, Eugene C	Oakland	1885
Reilly, Paul H	Oakland	1883
Rimpau, Frank T	Santa Barbara	1883
Roche, Thomas B	San Francisco	1892
Rogers, Nathan, M. D	San Francisco	1876
Root, George A	San Francisco	1888
Ross, George I	Stockton	1893
Roturier, Emil		1883
Rowe, Frederick W		1890
Rubel, Chas. C	Marysville	1895
Ryan, Peter A	San Francisco	1892
Samuels, Edward H., M. D	San Francisco	1891
Sanborn, William M., M. D	Oakland	1888
Scamell, William J., M. D	San Francisco	1893
Scherb, Louis Henry	Fort Grant, Ariz	1893
Schmelz, Charles J., M. D	San Francisco	1885
Schmidt, Edwin V	San Francisco	1890
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Scholl, A. L., M. D	San Francisco	1881
Schwartz, Harry	San Francisco	1891
Seifert, Charles A	Oakland	1887
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Simmons, Hayden M	San Francisco	1890
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Skinner, Edwin E	Eureka, Cal	1886
Skinner, John Bryant	San Francisco	1892
Skinner, Robert W	Eureka, Cal	1883
Smith, Arthur H	San Francisco	1879
Smith, Kirby B	Lorin, Cal	1890
Sommer, Adolph	New York	1879
Spiro, Harry	San Francisco	1893
Squires, Harry J	Berkeley	1890
Stange, Carl F	U. S. Navy	1894
Stock, William S., B. A	Portland, Oregon	1892
Stone, Bertha I	San Francisco	1894
Thevenet, Ernest J	San Francisco	1888
Topley, James H	Vallejo	1885
Topley, William H	Vallejo	1888

†Deceased

Name	Residence	Date of Graduation
Tobriner, Ike	Oakland	1893
Trask, Henry C	San Francisco	1890
Trautz, Otto George	Benecia	1891
Troppmann, Charles M	Merced	1881
Tryon, James W	Sacramento	1882
Turner, Guy S	Modesto	1885
Upp, William A	San Francisco	1893
Ullman, Fred. G	San Francisco	1895
de Urunuela, N. R	San Francisco	1895
Van Werthern, Joseph, M. D	San Francisco	1889
Villain, Albert John, M. D	San Francisco	1892
Volkmann, Martin F		1891
Vogel, Rudolph Fred	Los Angeles	1893
†Vreeland, Ph. L		1879
Ware, John Hiram	Portland, Or	1891
Wagner, Allen C	San Jose	1889
Wall, Henry A	Olympia, Wash	1883
Waller, Julian L	San Francisco	1889
Waller, Samuel Leroy	San Francisco	1893
Walsh, Andrew D	Redwood City	1884
Warren, Joseph S	San Francisco	1887
Wechsler, Paul	Germany	1892
Weihe, Otto A	San Francisco	1889
Weiss, Philip	San Francisco	1878
Westlake, Leonard J	Nevada	1891
Whiting, Eugene C	San Francisco	1893
White, Thomas J	San Francisco	1888
Whitney, William B	Healdsburg	1884
Wise, Matthew S	San Francisco	1893
Williams, Laurence R	Oakland	1889
Wight, David	Oakland	1888
Wollenberg, Charles M	San Francisco	1894
Worth, Thomas	San Francisco	1891
Wulzen, Diedrich H. Jr	San Francisco	1887
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Argenti, Jerome J. B	1880	2944½ Mission St., S. F.
Airaldi, August	1892	7th and Howard Sts., S. F.
Bacon, Gaston E	1875	2645 Sacramento St., S. F.
Bagley, Hubert	1893	11½ Fulton St., S. F.
Bagot, Edward A	1892	22d and Guerrero Sts., S. F.
Bandel, Edward F	1894	Pasadena, Cal.
Barbat, J. Henry, M. D	1880	1618 Folsom St., S. F.
Barbat, Josie E	1884	1808 Encinal Ave., Alameda
Bayly, Chas. A., Jr	1895	Grant Ave. and Sutter Sts., S. F.
Beaizley, Geo. T	1885	434 Sutter St., S. F.
Beckett, F. A	1883	220 Sutter St., S. F.
Beck, H. M	1889	G. Leipnitz & Co., S. F.
Besthorn, H. E. D	1884	38 1st St., S. F.
Bernheim, M. R	1891	Ellis and Buchanan Sts., S. F.
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Bowerman, K. B	1893	Sutter and Polk Sts., S. F.
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Callender, Ernest G	1891	Los Angeles, Cal.
Cavagnaro, August A	1892	1011 Jackson St., S. F.
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Christopher, J. F	1895	160 Golden Gate Ave., S. F.
Cleary, Stephen, M. D	1890	Benicia, Cal.
Conlan, Francis J	1894	Nevada City, Cal.
Connolly, Thomas W	1894	305 Golden Gate Ave., S. F.
Cogswell, Fred L	1892	1045 Market St., S. F.
Cox, Levitt H	1889	Polyclinic, 406 Ellis St.
Crowley, Thos. J	1892	Toland Medical College, S. F.
D'Artenay, Eugene	1882	Cor. 24th & Potrero Ave, S. F.
Devine, John	1879	Santa Monica, Cal.
Des Marais, L. N	1892	1154 E. 14th St., Oakland
Donaldson, John G	1891	1801 San Pablo Ave., Oakland
Dore, C. W	1895	2110 Magee Ave., Berkeley, Cal.
Dowdall, Richard J	1894	318 18th St., S. F.
Drossel, Aug. A., M. D	1886	Cor. Powell & Jackson Sts. S F.
Driscoll, Fred A	1888	Cor. 10th & Folsom Sts., S. F.
Dufficy, Geo. W	1893	400 Hayes St., S. F.
Duncan, F. T	1895	558 Folsom St., S. F.

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Edwards, Wm	1892	119 Powell St., S. F.
Emde, George H	1894	Lodi, Cal.
Fairbanks, Chas. D	1895	Santa Ana, Cal.
Folkers, O. H	1893	423 Golden Gate Ave., S. F.
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France, William M	1894	2803 16th St., S. F.
Gates, Emery P	1887	100 Stockton St., S. F.
Gilbride, P. J	1891	771 Harrison St., S. F.
Gibson, Martin R	1891	612 Hyde St., S. F.
Gienger, Chas. J	1892	503 Fell St., S. F.
Green, Geo. A	1893	San Jose
Green, Franklin T	1882	500 Fell St., S. F.
Grossman, Edward L., M. D	1891	Eddy and Steiner Sts., S. F.
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Hall, B. Fred	1889	Palo Alto, Cal.
Harris, Louis	1891	Fresno, Cal.
Harvey, Geo. J	1889	Langley & Michaels Co., S. F.
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Hawkes, Robt. H	1892	14th and Center Sts., Oakland
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Heinzeman, Edw. A	1892	Los Angeles
Hedrick, W. M	1893	513 Taylor St., S. F.
Higby, E. Payson	1894	482 Plymouth Ave., Oakland
Hirst, Chas. P	1893	Berkeley, Cal.
Higgins, Chas. C	1888	603 Montgomery St., S. F.
Hoover, Ulysses G	1890	Cal. & Devisadero Sts., S. F.
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Jones, A. S	1895	Placerville, Cal.
Johnson, W. P	1893	Los Gatos, Cal.
Johns, T. Edwin	1892	Los Gatos, Cal.
Kellogg, Wilfred H	1892	1149 14th St., Oakland, Cal.
Kelsey, Harry D	1888	Berkeley, Cal.
Kelsey, J. Edson	1891	Arroyo Grande, Cal.
Kelton, Julian O	1894	Ukiah, Cal.
Kidd, A. J	1894	1002 Market St., S. F.
King, W. H. V	1891	Redwood City, S. F.
Ladd, Henry	1891	Cor. 4th and Howard Sts., S. F.
LaRue, D. Duke	1894	St. Helena, Cal.
Legge, Robt. A	1891	Cor. California & Hyde St., S.F.
Lengfeld, J. L	1895	155 New Montgomery St., S. F.
Leet, Robt. A	1890	Bowman & Son, Oakland, Cal.
Leithold, John V	1890	Woodland, Cal.
Lovotti, Fred	1891	1400 Dupont St., S. F.
Link, Victor	1890	701 Geary St., S. F.
Lichtenstein, Max	1894	610 Oak St., S. F.
Levison, Chas. G., M. D	1884	2409 Washington St., S. F.
Lucchetti, Victor F	1894	934 Broadway, S. F.
Meyers, August W	1885	Honolulu, H. I.
Mardis, Benj. A., M. D	1890	
Medros, Joseph J., M. D	1890	1728 8th St., Oakland, Cal.
Mendel, L. C	1893	Antioch, Cal.
McCarthy, James H	1888	202 Stockton St., S. F.
McQueen, H. M	1895	400 Sutter St., S. F.
Miller, H. L	1895	Jacksonville, Oregon
Nash, Bert	1894	Sutter & Devisadero St., S. F.
Newman, Felix H	1891	Monterey, Cal.

Newton, John C.....1895.....1198 Treat Ave., S. F.
Nichols, Horace S.....1887.....Healdsburg, Cal.
Nightingale, Joseph B.....1892.Cor Fell & Devisadero Sts., S. F.
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O'Grady, James J.....1891.....U. S. S. Pinta
O'Neil, Ambrose E.....1889.....608 17th St., S. F.
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Onesti, S. J.....1895.....2227 Jones St., S. F.
Patterson, Frank F.....1891.....1924 Taylor St., S. F.
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Perkins, Philip J.....1888.....33 Grant Ave., S. F.
Potter, Frank L.....1894.....Oakland, Cal.
Preuss, John.....1892.....Marshfield, Oregon
Prosser, Sanford S.....1891.....
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Ray, Fred E.....1876.....Sacramento, Cal.
Rees, David R.....1892.....Livermore, Cal.
Roche, Thos. B.....1892.....701 Market St., S. F.
Ross, George I.....1893.....Stockton, Cal.
Rubel, C. C.....1895.....Marysville, Cal.
Ryan, Peter A.....1892.....C. E. Worden & Co., S. F.
Sanborn, Wm. K., M. D.....1888.....1369 8th St., Oakland
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Schmelz, Chas. J., M. D.....1885.....1700 Market St., S. F.
Seifert, C. A.....1887...7th and Myrtle Sts., Oakland
Sharp, Sol. A.....1892..Cor Polk and Jackson Sts., S. F.
Shaw, Herbert G.....1894.....701 Geary St., S. F.
Simmons, H. M.....1895.....704 Ellis St., S. F.
Stange, Carl F.....1894..U. S. S. Independence, Mare Is.
Stone, Bertha I.....1894.....Sutter Creek, Cal.
Tobriner, Ike.....1893.....1113 Jefferson St., Oakland
Thevenet, Ernest J.....1888.....700 Washington St., S. F.
Topley, James H.....1885.....Vallejo, Cal.
Trask, Harry C.....1890..Cor Post & Buchanan Sts., S. F.
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Upp, William A.....1893.....1323 Clay St., S. F.
Uruñuela, N. R. de.....1895.....1520 Taylor St., S. F.
Villain, Albert J., M. D.....1892.....French Hospital, S. F.
Von der Lieth, H. O.....1893.....742 Broadway, S. F.
Volkman, Martin F.....1891.....San Francisco
Walsh, Andrew D.....1884.....Redwood City, Cal.
Wagener, Allen C.....1889.....San Jose, Cal.
Warren, Jos. S.....1887.....1144 McAllister St., S. F.
Ware, John H.....1891.....Portland, Or.
Waller, Julian L.....1889.....33 Grant Ave., S. F.
Wechsler, Paul.....1892.....Germany
Weihe, Otto A.....1889.....640 Post St., S. F.
Wollenberg, Chas. M.....1894.....Turk and Taylor Sts., S. F.
Worth, Thomas.....1891.....Palace Pharmacy, S. F.
White, Thomas.....1888.....419 Clayton St., S. F.
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Wise, M. S.....1893.....300 6th St., S. F.
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Attendance is required upon four annual courses of lectures. Graduates of recognized literary or scientific colleges, and those who have attended two years of the Natural Science course of a recognized university, and graduates of Pharmaceutical colleges in good standing, are admitted to the second course without examination.

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Fee for each Course of Lectures	100
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For further information address the Dean,

DR. R. A. MCLEAN,
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HARRY P. CARLTON, D. D. S., Instructor in Operative Technic.

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JAS. G. SHARP, D. D. S., M. D., Assistant to the Chair of Physiology and Histology.

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In accordance with a rule adopted by the National Association of Dental Faculties, requiring three years' attendance of all matriculates, matriculates who are graduates in Medicine will be admitted to the second year without examination.

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PROSPECTUS

OF THE

TWENTY-FIFTH ANNUAL SESSION

OF THE

THE LIBRARY OF THE
FEB 26 1931
UNIVERSITY OF ILLINOIS

California College of Pharmacy

DEPARTMENT OF PHARMACY, UNIVERSITY OF CALIFORNIA

SESSION OF 1897.

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College of Pharmacy

DEPARTMENT OF PHARMACY, UNIVERSITY OF CALIFORNIA

113 FULTON STREET — SAN FRANCISCO, CAL.

Between Polk Street and Van Ness Avenue

SESSION OF 1897.

Matriculation and Entrance Examination, Monday, February 1st, 9 A. M.

Opening of the College, Wednesday, February 3d, at 9 A. M.

Alumni of this College and others who wish to receive this Prospectus are requested to forward their names and addresses to the Dean.

SAN FRANCISCO:
CALIFORNIA COLLEGE OF PHARMACY
1897

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J. J. B. ARGENTI, Ph. G., Professor of Microscopy, Vegetable Histology and Pharmacognosy.

FRANK T. GREEN, Ph. G., Professor of Analytical Chemistry, and Director of the Analytical Laboratory.

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H. R. WILEY, A. B., Lecturer on Pharmacal Jurisprudence.

ROBERT A. LEET, Ph. G., Instructor in Chemistry.

J. S. WARREN, Ph. G., Assistant in the Pharmaceutical Laboratory.

O. A. WEIHE, Ph. G., Instructor in Materia Medica.

H. M. McQUEEN, Ph. G., Instructor in Microscopy, Vegetable Histology and Pharmacognosy.

ANNOUNCEMENT.

The Trustees and Faculty of the California College of Pharmacy herewith present this Prospectus of the Twenty-fifth Annual Course of Instruction.

The Requirements for Admission, being now made to cover the first year's work in the High Schools of this State, those who are intending to enter College should make sure that they can fulfill this condition. If they cannot produce certificates showing that they have satisfactorily completed the studies named, they should earnestly apply themselves to make up their deficiencies in this direction before presenting themselves for the entrance examination. The effort thus put forth will be of the greatest value to them, not only during their College career, but in all their future life.

Previous Experience in Drug Stores.—Applications are frequently made by persons who wish to enter the college before they have had any experience in pharmacy. In all such cases the Trustees advise the applicants to find employment in a drug store for at least a year before attending college.

Time of Year of Lecture Course.—This College has hitherto held its sessions during the summer months. Desiring to be in accord with the other professional Departments of the University, and also with the Eastern Colleges of Pharmacy, it has been decided to change from summer to winter terms, as soon as this can conveniently be accomplished. With this end in view, the next term will commence on MONDAY, FEBRUARY 1ST, continuing about seven months. The following term will begin November 1st, 1897, closing about June 1st, 1898, after which the College will be in session from September to April, beginning with 1898.

Practical and Theoretical Teaching.—The additional laboratories now provided have rendered it possible to make the instruction of the College thoroughly practical. This, however, is not to be done at the expense of theoretical knowledge, but in addition to it. Accordingly, the lectures given will now consist largely of directions for the performance of work to be actually done under the Professors' eyes, with expositions of the principles involved, and of the theories held regarding them.

Other New Features.—Two new features were introduced into the curriculum last year; one is a short series of lectures on Physiology in relation to the action of drugs. This course will be extended this

year throughtout the term. It has been deemed necessary in order that the student may have an intelligent idea of the vital processes so far as they are affected by the administration of medicaments. It is in no sense intended to fit pharmacists for the practice of medicine, but to enable them to understand why and how drugs produce their characteristic effects. Possessed of this knowledge the pharmacist is a more efficient aid to the physician than he can be without it.

The other feature was a short series of lectures on Pharmacal Jurisprudence, by a competent member of the legal profession. This course shows the pharmacist his status on the principal legal points that arise from time to time in his calling.

San Francisco as an Educational Center.—San Francisco, as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, the visiting of which, accompanied by the professors, is a feature in the College instruction. The University of California is near by, where there is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

REQUIREMENTS FOR ADMISSION.

1. Applicants for admission must be at least eighteen years of age, except in the case of graduates of High Schools of this State or of "Accredited Schools," or of Normal Schools of this State, or of other institutions of a grade equal to the above. All such applicants are admitted irrespective of their age. (While it is advisable that students shall have had one or two years practical training in a drug-store before entering the college, this is not compulsory.)
2. Applicants will be accepted who bring any of the following credentials:
 a. Certificates of graduation from High Schools of this State.
 b. Diplomas of graduation from schools or academies accredited by the State University. (See Register of the University of California.)
 c. Certificates of high standing in other institutions of the collegiate grade.
 d. Diplomas from Normal Schools of this State.
 e. First grade teachers' certificates of this State.
 f. Certificates of having completed satisfactorily the first year's course in High Schools of this State.
3. Applicants who do not present any of the foregoing credentials will be examined in the following branches:

a. English—They will be required to show their ability in spelling, punctuating, use of capitals, grammatical construction and correctness of expression. (The handwriting will be estimated and form a part of this examination.)
b. Geography—American and general.
c. Free-hand drawing.
d. Mathematics—*Arithmetic:* Fundamental rules; fractions, common and decimal; denominate numbers; percentage; proportion. *Algebra:* Fundamental rules; fractions; equations of the first degree, consisting of two or more unknown quantities.
e. Latin—Rudiments; declensions of nouns, pronouns, adjectives; conjugations of verbs; translation of simple sentences from Latin to English and English to Latin.

Applicants who fail to obtain the required percentage in Latin may be entered conditionally, but will be required to pass the examination satisfactorily before entering the Senior class at the time of the next entrance examination.

MATRICULATION.

Applicants who desire admission without examination are required to present their credentials to the Dean at the College on

Saturday, January 30th, at 9 A. M.

when those whose credentials are sufficient will be matriculated. All others will present themselves for examination at the College on

Monday, February 1st, at 9 A. M.

CHEMISTRY.

Lectures and Demonstrations by

PROFESSOR WILLIAM T. WENZELL.

Junior Course.—Inorganic Chemistry.

The lectures to the Junior Class will treat of elemementary physics, illustrating the general properties of matter, and the forces of light and heat, together with their relations to chemical science.

To be followed with a concise course of elementary and inorganic chemistry, the electro-chemical theory, the equivalence of atoms and radicals, chemical notation and nomenclature, and the laws of chemical combination.

A large portion of these lectures will treat of those elements and their compounds which are of special interest to the pharmaceutical student.

SYLLABUS.

1. Introduction to physical science. General properties of matter—extension, impenetrability, divisibility, indestructibility, porosity, and inertia.
2. The attraction of matter—gravitation, cohesion, adhesion. The four states of matter—the gaseous, the liquid, the solid and the radiant.
3. Chemical attraction, analysis and synthesis, atoms and molecules.
4. Elements—division into metals and metalloids, symbols, atomic weights, notation; the laws of chemical combination, as exemplified in the quantitative law, the law of multiples, and the law of reciprocal proportions.
5. The law of equivalence of combining power of elements, their classification, the variation of equivalences. How to indicate equivalence. Graphic symbols.
6. The electro-chemical series—chemical reaction, analytical, synthetical and meta-thetical. Typical reactions illustrated by chemical equations.

7 and 8. Rules for writing chemical formulas and naming them. The multiplication of atoms and molecules. Definition of an acid and a base. The derivation of salts from acids and bases. Simple and compound radicals.

9. Oxygen—History, occurrence in nature, preparation, physical properties, chemical properties, liquefaction, functions in nature in relation to organic life, uses in arts and medicine.
10. Ozone—History, occurrence in the atmosphere, preparation, physical and chemical properties, constitution and uses.
11. Hydrogen—History, occurrence, preparation, physical and chemical properties, oxy-hydrogen blowpipe, effect on animals, its compounds with oxygen.
12. Water—occurrence in nature, preparation. Its exact composition by analysis and synthesis. Physical properties, as water, as steam and as ice. Chemical properties, the formation of hydrates. Water of crystallization. Deliquescence and efflorescence.
13. Natural waters—Rain, spring, well, artesian, river and pond waters. The natural constituents of these, mineral.
14. Natural waters continued—Living organisms, plants and animals; contaminated waters from a sanitary point of view. Selection of water for industrial and domestic purposes. Purification of water and its sanitary analysis. Seawater—its composition.
15. Mineral waters—Classification, saline, acidulous, chalybeate, sulphurous, silicious, etc., with examples.
16. Hydrogen dioxide—History, preparation, properties, uses. Nitrogen—History, preparation, properties, physical and chemical properties; functions in nature, its compounds.
17. The atmosphere—Its composition, its relation to combustion, to

animal and vegetable life; microbes and their germs, relation to mould, fermentation, putrefaction, disease, sewer gas.

18. Compounds of nitrogen and oxygen. Nitrogen pentoxide. Nitric acid, occurrence, preparation, composition, impurities, properties, tests; uses in arts and medicines. Nitrogen monoxide—History, preparation, purification, properties, use as anæsthetic.
19. Nitrogen dioxide, nitrogen trioxide, nitrous acid, nitrogen tetroxide—their preparation and their physical and chemical properties. The metallic nitrates and nitrites.
20. Compound of nitrogen and hydrogen. Ammonia—occurrence, preparation, properties, tests, uses in the arts and medicine.
21. Carbon. Occurrence in nature. The diamond, graphite, amorphous carbon, anthracite, bituminous coal, charcoal, lampblack, gas carbon; their nature, properties and uses.
22. Compounds of carbon and oxygen—Carbon dioxide, preparation, production by animal life, and by processes of fermentation. Its composition, physical and chemical properties, liquefaction, solidification, solubility in water. Carbonic acid, formation, tests, uses in plants, uses in the arts. Carbon monoxide—Preparation, physical, chemical and physiological properties. Production by coal stoves.
23. Metallic carbonates.
24. The Halogens—Chlorine. Its discovery, occurrence, preparation, physical and chemical properties, tests. Compound of chlorine and hydrogen, hydrochloric acid. Composition, preparation, properties, tests and uses. Aqua regia, composition and uses.
25. Oxides and acids of chlorine. Hypochlorous acid, chlorinated lime, Javelle water, Labarraque's solution, bleaching. Chloric acid and chlorates.
26. Metallic chlorides.
27. Bromine—Its discovery, occurrence, preparation, properties, tests, and important compounds; hydrobromic acid, uses in arts and medicine. Iodine—Discovery, occurrence, preparation, properties, tests, compounds and uses. Hydriodic acid. Fluorine, history, occurrence, compounds. Hydrofluoric acid, preparation, properties, tests, uses in arts.
28. Metallic bromides, iodides and fluorides.
29. Sulphur. History, occurrence, preparation, properties; varieties of sulphur tests. Metallic sulphides.
30. Compounds of sulphur and oxygen. Oxides and acids of sulphur. Sulphur dioxide, preparation, properties, uses in arts and medicine. Sulphurous acid, preparation and properties.
31. Sulphuric oxide, preparation and properties. Sulphuric acid, preparation, properties, tests and uses. Fuming sulphuric acid, composition, preparation, properties.
32. Metallic sulphates and sulphites. Thiosulphates.
33. Compound of sulphur and hydrogen, hydrogen sulphide; preparation, properties, tests and uses in analytical chemistry; metallic

sulphides, carbon disulphide, preparation of salts, chlorides of sulphur.

34. Boron—Occurrence, preparation, properties; boric acid; metallic borates. Silicon—Occurrence, preparation, properties, silicic acid, metallic silicates.

35. Phosphorus—History, occurrence; common phosphorus, preparation; amorphous phosphorus, preparation; their properties and uses in arts and medicine, metallic phosphides.

36. Phosphuretted hydrogen, compounds, preparation, properties. Oxides and acids of phosphorus, hypophosphorous acid, preparation, composition, properties and use in medicine. Pyrophosphoric acid, metaphosphoric acid, and common phosphoric acid, their uses and preparation.

37. Metallic phosphates.

38 and 39. Arsenic—Discovery, occurrence, preparation, physical and chemical properties. Compounds of arsenic and sulphur, arseniuretted hydrogen, preparation, properties; oxides and acids of arsenic. Arsenious oxide, occurrence, preparation, properties, tests, uses. Marsh's, Reinsch's and Fleitmann's tests. Arsenious acid; properties; arsenic oxide and arsenic acid, composition and preparation; metallic arseniates and arsenites.

40 and 41. Antimony—History, occurrence, preparation, physical and chemical properties. Antimoniuretted hydrogen, preparation, properties and tests. Oxides and acids of antimony, sulphides of antimony, chlorides of antimony, tartar emetic.

42. Metals—Definition, occurrence in nature, physical properties, lustre, opacity, color, specific gravity, malleability, ductibility, fusibility, volatility, alloys, crystallization, classification.

43. The Alkaline group—Sodium, Potassium, Lithium; occurrence, preparation, physical and chemical properties and tests. Oxides and Hydrates.

44. The Earthy bases—Calcium, Barium and Strontium; occurrence, preparation, physical and chemical properties, tests. Oxides and Hydrates.

45. The Magnesium group—Magnesium, Zinc, Cadmium; occurrence, preparation, properties, tests. Oxides and Hydrates.

46. Mercury, Silver—Occurrence, preparation, properties and tests. Oxides and Hydrates.

47. Cerium, Tin, Lead, Bismuth—Occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.

48 and 49. The Iron group—Iron, Nickel, Cobalt, Manganese, Chromium and Aluminum; occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.

50. Uranium, Tungsten, Molybdenum, Gold, Platinum, Palladium—Occurrence, preparation, properties and tests. Oxides, Hydrates and Acids.

Senior Course—Organic Chemistry.

In the Senior Course the student will be instructed in the more advanced departments of chemical philosophy, molecular physics, the atomic theory, crystallography, stoichiometry, etc.

To conclude with a systematic course of organic chemistry, in which the chemistry of the hydrocarbons and their most important derivatives, alcohols, ethers, acids, glucosides, alkaloids, etc., will receive their due share of attention.

SYLLABUS.

1. Chemical philosophy—The Atomic Theory, the law of Mariotte, the Law of Charles, the Law of Avogadro.
2. The combination of gases by volume. Specific heat and relation to atomic weight. The atomicities of elemental molecules.
3. The barometer—Construction and uses in gasometry. The co-efficient expansion of gases. The law of diffusion of gases.
4. Proximate and elementary analysis. Empirical, molecular, rational and graphic formulas.
5. The classification of organic compounds—Homologous series, physical characteristics, densities, melting and boiling points, optical properties, etc.
6. The paraffins—Saturated and unsaturated. Their isomerism, nomenclature and their structure, as exemplified by graphic formulas.
7. Petroleum and its products—Ozokerite, paraffin, illuminating gas, lubricating oils, benzine, etc.
8. Monovalent alcohols—Their constitution, general formula, methyl, ethyl, propyl, butyl and amyl alcohol, their preparation and properties.
9. Isomerism of the monovalent alcohols—Primary, secondary and tertiary, nomenclature, their structure and physical properties.
10. The products of their oxidation—Aldehydes and ketones, their physical and chemical characters.
13. Ethers derived from monovalent alcohols—Haloid ethers, simple ethers, compound ethers (esters), their constitution and preparation.
14. The divalent alcohols (glycols); the trivalent alcohols and ethers. Glycerine and nitroglycerine, fats and soaps, butter and oleomargarine, oils drying and non-drying, oleates.
15. Tetravalent, pentavalent and hexavalent alcohols and derivatives.
16. The carbohydrates—The glucoses, the saccharoses and amyloses, their characteristics and relations.
17. Carbohydrates and derivatives—Glucose, levulose, cane sugar, milk sugar, maltose, dextrine, glycogen, starch, lignin, cellulose, nitro-celluloses.
18. The glucosides—Salicin, arbutin, glycyrrhizin, amygdalin frangulin, sinalbin, myronic acid, synthetic glucosides.
19. Fermentations—Vinous, lactous, butyrous, etc.

20. The organic acids—Their general formula, constitution and physical properties.
21. Monovalent and monobasic acids—Formic, acetic, butyric and valerianic acids. Their preparation and properties.
24. Divalent monobasic and dibasic acids, derived from divalent alcohols—Oxalic, lactic, succinic, etc., acids.
25. Trivalent acids derived from the corresponding alcohols—Glyceric, malic, tartaric, saccharic, aconitic, citric, etc.
26. Amides and their derivatives—Their general formula; acetamides, asparagin, aspartic acid. Amines—General formula and constitution; primary, secondary and tertiary—Monomines, diamines and triamines.
27. Alkaloids—Oxygenated; opium basis, cinchona bases, strychnine, atropine, cocaine, etc.; non-oxygenated, conine, nicotine, etc.; their constitution.
28. Carbonic acid and its derivatives—Carbon disulphide, carbamic acid, urea, etc.
29. Cyanogen and its compounds—Hydrocyanic acid, metallic cyanides, ferro and ferri cyanides, sulpho-cyanates.
30. The aromatic compounds—Benzine, its constitution and the general characters of its derivatives.
31. The isomerism of the substitution, as exemplified in the halogen, nitro, amido, sulphonic, etc., compounds, and their relative position in the benzine ring.
32. Halogen derivatives of the Benzine Hydrocarbon.
33. Sulphonic derivatives.
34. Nitro derivatives.
35. Amido derivatives.
36. The monovalent phenol—Carbolic acid and derivatives. Phenolphthalein, phenol-sulphonic acid, etc.
37. Aromatic alcohols—Benzyl alcohol, etc. Aromatic aldehydes; benzyl, cumic, cinnamic aldehydes. Aromatic ketones. Hypnone.
38. Divalent phenoles—Pyrocatechin, resorcin, hydro-quinone, orcin, etc.
39. Trivalent phenoles—Pyro-gallol, phloroglucin, oxyhydro-quinone, Monobasic, aromatic acids—Benzoic, hippuric, toluic, phthalic.
40. Unsaturated—Atropic, hydro-cumaric, tyrosin, tropic, gallic, tannic, quinic, cumaric, caffeic, ferulaic, acids.
41. Indigo group—Indigo blue, indigo white, indigo-sulphonic acid. Isatin, indoxyl, indol, skatol.
42. Naphthaline series, its addition and substitution compounds: Hydrides and hydrates, *a* and *b*. Naphtols and position of the substitution groups.
43. Aromatic compounds containing three benzene rings—Anthracine and its derivatives: Anthraquinone, alizarine, purpurine, chrysarobine, etc.
44. Pyridine bases—Ptomaines.
45. Terpines, camphors, essential oils, resins, oleo resins and balsams.

46. Aromatic Compounds with more than one benzene nucleus—Diphenyl group: Diphenyl, di-p-amido-diphenyl, carbazole, fluorene, etc.
47. Triphenyl group—Triphenylmethane and its derivatives (aniline colors).
 a. Malachite group—Diamido derivatives.
 b. Rosaniline group—Triamido derivatives.
 c. Rosolic acid group—Oxy derivatives.
 d. Phthalein group—Meta carboxyl derivatives.
48 and 49. The chemistry of Synthetic remedies.
50. Outlines of Crystallography.

CHEMICAL LABORATORY—EXPERIMENTAL.

PROFESSOR FRANK T. GREEN, Director.

Junior Course.

This laboratory has recently been refitted with desks and appliances of modern pattern. Each desk contains drawers and lockers, water, gas, and drainage, besides being furnished with a set of reagents, and necessary apparatus for a systematic course in elementary experimental chemistry, the behavior of the bases and acids, and qualitative chemical analysis. The junior course embraces the study of chemistry from actual experiment; for a student learns something to hear how a thing should be done; more, to see how it should be done; but most, to do it himself, under the guidance of a teacher and with the conveniences of a laboratory.

Believing in the laboratory method of teaching, the trustees have striven to have the courses complete and practical. The junior (1st session) begins with the plainest example of chemical action, then follow the analysis and synthesis of simple things. The chemistry of the gases, where the student separates or combines oxygen, hydrogen, nitrogen, chlorine, etc., is taken up. Then the non-metals are considered, and their properties investigated by each student.

The chemistry of the metals completes the first session of the junior year in the chemical laboratory. Remsen's Elementary Chemistry being the text book. The student's time during the chemical laboratory —experimental—second session, is taken up by investigating the properties of the metals, as shown by reagents; and with the behavior of the acids form the first steps leading to the study of analytical chemistry.

Qualitative chemical analysis completes the term, the text book being A. H. Elliot's Qualitative Analysis. In adopting such a wide range of study, it will be the aim of those in charge to have typical processes of precipitation, neutralization, crystallization and analysis carefully and correctly performed, rather than cram the student with hurried work.

SYLLABUS.

First Session.—Two Months.

1. Chemical action, changes, mixtures and compounds; the atom and the molecule; volume and weight.
2. Oxygen—Its separation, with a series of experiments showing its properties. Ozone—the chemical reaction. Hydrogen—Its separation, properties. Heat—Its development.
3. Hydrogen and Oxygen—Water.—Analysis and synthesis of; its behavior as regards heat and cold; moisture and water of crystallization. Hydrogen peroxide—Its preparation and properties. Percentage composition.
4. The Haloids—The separation of chlorine, bromine, iodine, and hydrofluoric acid; experiments showing properties of each; the chemical equation.
5. The Acids and Alkalies and their relationship—Indicators by change of color. The Oxides—Bases and anhydrides. The manufacture of hydrochloric acid, with calculation of theoretical yield, and comparison with actual results of students' work. The properties of hydrochloric acid—Specific gravity and its application.
6. Nitrogen—The separation of nitrogen; its properties and the nature of some of its principal oxides, as shown experimentally by each student. Salts.
7. Ammonia. Its formation, properties. Ammonium and some of its salts. The properties of gases and solubility. The preparations of nitric acid. Predictions as to yield from calculations compared with actual results—Indications of Purity.
8. Carbon. Its allotropic forms, its properties and its oxides. The specific gravity of gases and absorption. *Silicon and Boron*—Forms, combinations and properties of compounds containing each. The Blowpipe and its qualitative tests.

9 and 10. The Precipitate, the Solution and the Crystal Manufacture of Salts. Chemical processes as employed by the manufacturer. Summary of theories, as shown by practical work.

Second Session—Four Months.

11—15. The Metals, physical properties of each, and their chemical behavior. Silver, lead, mercury, bismuth, cadmium, copper, arsenic, antimony, gold and platinum, iron, aluminum chromium, zinc, manganese, cobalt and nickel, calcium, aluminum, barium, strontium, magnesium, potassium, sodium and ammonium. Chemical processes, as employed by the analyst.

15—20. The outlines of qualitative chemical analysis of the bases.

20—23. The chemical behavior and tests of the acids.

23—26. Identification of acids, bases or salts.

CHEMICAL LABORATORY—ANALYTICAL.

PROFESSOR FRANK T. GREEN, Director.

Senior Course.

The analytical first session embraces a systematic course of quantitative chemical analysis, volumetric, gravimetric and colorimetric. This is a necessity in the education of a practical pharmacist, and the course is shaped to this end. It begins with quantitative (gravimetric), chemical analysis and manipulation. Assays and tests of U. S. P. preparations follow, volumetric analysis and its application to practical pharmacy; also spectrum analysis, water analysis, sanitary, technical and mineral, together with colorimetric, completes the first senior session, the text book being SCHIMPF'S volumetric analysis.

The second session begins with urinalysis and follows it in all its practical details, a feature of chemical work which is deemed of great importance to the student of pharmacy.

The polaristrobometer is employed in estimating diabetic sugar, and the absorption bands of coloring matters of urine are demonstrated by means of the spectroscope. Toxicology is dwelt upon; also the polarization of sugar and albumen; milk analysis, according to the methods of the city Board of Health, and the search for food adulterants complete the course. The text-book being "The Milk, the Urine and the Common Poisons," by Holland.

In the back of the U. S. Pharmacopœia there are several pages devoted to tables of gravities, correction of temperatures, tests and volumetric solutions, formulæ and data, a great deal of which to the uneducated pharmacist will be neither valued nor comprehended.

The Analytical Course is made a part of the curriculum of the College, for the special purpose of fitting pharmacists for the work of testing all U. S. P. chemicals for purity or adulterations; for the estimation of either acids or bases in a salt or solution; for determining the gravities of all U. S. P. liquids. Year by year volumetric methods are establishing themselves in all practical laboratories and factories, and for a check in pharmaceutical manufacturing are invaluable for their speed and accuracy.

It will be the aim of those in charge of the laboratory to fit these students for the work the world expects of them. Little will be asked of the memory, but the utmost of the understanding, thus avoiding a cramming system, and giving facilities with instruction for advanced work that cannot be gained in either a retail pharmacy or lecture hall.

This course requires twenty-six sessions of three hours each, from 1:30 to 4:30 P. M.

SYLLABUS.

First Session—Three Months.

1—5. Quantitative manipulation and analysis. Gravimetric analysis of U. S. P. preparations. The spectroscope and its application to chemistry.

5—10. Volumetric analysis and its application to official assays.

10—15. Water analysis—Sanitary, technical and mineral, qualitative and quantitative, colorimetric analysis, nesslerizing.

Second Session—Three Months.

15—20. Urinalysis—Qualitative, quantitative and microscopic. The polarization of urine. The absorption, spectra of blood, etc.

20—25. Toxicology of the active poisons and analysis of foods and tissues for poison. The polariscope and its uses in quantitative work—sugars, albumen and honey.

25. Milk analysis, according to the official methods of the Board of Health.

26. The analysis of foods—Butters, spices, teas, coffee, pickles, canned goods.

PRACTICAL AND THEORETICAL PHARMACY.

PROFESSOR JOHN CALVERT.

Junior Course.

The Junior Course in this Department will consist chiefly of practical work in the laboratory for three hours each week. It is not intended to have regular lectures, but as the work proceeds, explanations of the various processes will be given, and attention directed to subjects of importance, which may require detailed explanation.

The Professor of Pharmacy will be aided by a competent instructor, who will closely follow the work in the laboratory, and each week hold an oral review, or "quiz," on the subjects which have been considered. An examination will be given to the class about once a month by the Professor, so that he may be able to judge of the progress made by the students.

Credits will be given for (1) Preparations, (2) Manipulations, (3) Reports, (4) Neatness and Order, (5) Occasional Examinations.

SYLLABUS.

1. Weights—Metric, apothecaries' and avoirdupois. Balances. Measures—Metric and wine.
2. Specific gravity. Liquids and solids.
3. Thermometry. Different systems.
4. Heat. Applications in pharmacy.
5. Distillation. Experiments.
6. Pulverization. Drying and powdering drugs. Granulation of salts. Sieves.
7. Solution. Clarification of liquids. Making test solutions. Percentage solutions.
8. Crystalline salts. Manufacture.
9. Crystalline salts continued.
10. Precipitated salts. Powders, oxides, etc.
11. Water and official waters.
12. Syrup. Official syrups.
13. Tinctures—By maceration, percolation and solution.
14. Infusions and decoctions.
15. Ointments and cerates.
16. Oleates.
17. Liniments. Plasters.
18. Glycerites. Honeys. Troches.
19. Elixirs.
20. Mixtures. Emulsions.
21. Dialysis.

Senior Course.

The Pharmaceutical Laboratory work for the Seniors is of a more advanced character than that for the Junior Class, and will include the manufacture of the more difficult preparations of the United States Pharmacopœia, such as scaled salts, resins, alkaloids, etc.

About one-fourth of the Senior course will be devoted to dispensing prescriptions, ranging from the simpler to the more difficult formulæ. Each student will be required to prepare, label and wrap each package, as if it were to be sent to a patient.

Explanations will be given with regard to incompatibles, doses, calculations and the proper methods to be employed in each case.

SYLLABUS.

1. Liquores, U. S. P.
2. Chemical Syrups.
3. Extracts, Fluid and Solid.
4. Emulsions.
5. Mixtures, U. S. P.
6. Ointments and Cerates.
7. Soaps and "Chartæ"

8. Suppositories.
9. Pills and Masses.
10. Tablets and Troches.
11. Effervescent Granular Salts.
12. Scaling—Scaled Salts, etc.
13. Resins.
14. Alkaloids, Glucosides and other principles. Assays of Galenical Preparations.
15. Synthetic Preparations, Organic.

PRESCRIPTION WORK.

16. Fluids—Measuring and weighing.
 Solids—Weighing, dividing, folding and wrapping.
17. Pills, Suppositories, Capsules and Cachets.
18. Ointments and Cerates.
19. Mixtures, Lotions and Liniments.
20. Elective work.
21. " "
22. " "

MATERIA MEDICA.

Lectures and Demonstrations by

PROFESSOR WILLIAM M. SEARBY.

Junior Course.

Lectures to the Junior Class begin by referring to the drugs derived from the vegetable kingdom. These are taken up according to the Natural Orders of the plants from which they are obtained. A description of the parts of the plants used and officially recognized is given, and also their physical properties, uses and doses. The student is required to examine the most important crude drugs as the lecture proceeds. Specimens of these are furnished by the college.

Their source, period of collection, selection as to quality, manner of preserving and commercial history are referred to. The latter part of the term is devoted to the study of the drugs of animal origin officially recognized. They are fully considered as their source, description, mode of collection, constituents, medicinal properties, doses and preparations.

SYLLABUS.

1. Introductory: What is Materia Medica? How viewed by physicians and by pharmacists. Organic and inorganic—vegetable and animal drugs. How shall we study them? Why inquire into their source, habitat, collection, preservation, etc.? Their identification, quality, composition, uses in pharmacy and medicine and their doses.
 Classification of vegetable drugs according to origin.
 Latin names of plants and their significance.

VEGETABLE DRUGS.

1. *Ranunculaceæ:* Pulsatilla, hydrastis.
2. Staphisagria, aconitum, cimicifuga.
3. *Magnoliaceæ:* Illicium.
 Menispermaceæ: Calumba, cocculus, menispermum, pareira.
4. *Berberidaceæ:* Berberis, caulophyllum, podophyllum.
 Papaveraceæ: Opium.
5. Other products of papaver somniferum; sanguinaria, chelidonium.
6. *Cruciferæ:* Sinapis.
 Polygalaceæ: Senega, krameria.
 Guttiferæ: Cambogia.
7. *Malvaceæ:* Althæa, malva, gossypium.
 Sterculiaceæ: Oleum theobromæ, cola.
8. *Linaceæ:* Linum, coca.
 Zygophyllaceæ: Guaiacum.
 Geraniaceæ: Geranium.
9. *Rutaceæ:* Buchu, xanthoxylum, pilocarpus.
 Citrus aurantium, limonum, etc.
10. *Simarubaceæ:* Quassia.
 Burseraceæ: Myrrha.
 Celastrineæ: Euonymus.
11. *Rhamnaceæ:* Rhamnus catharticus, Frangula and Purshiana.
 Ampelideæ: Uva passa.
 Sapindaceæ: Guarana.
12. *Anacardiaceæ:* Toxicodendron, rhus glabra, mastiche.
 Leguminosæ: Scoparius, tragacantha, glycyrrhiza, physostigma.
13. Kino, santalum, chrysarobinum, balsamum tolutanum, balsamum peruvianum, hæmatoxylon, cassia fistula.
14. Senna, tamarindus, copaiba, catechu, acacia.
15. *Rosaceæ:* Amygdala, prunus virginiana, quillaja, rubus Idæus et villosus, kousso, rosa, cydonium.
16. *Hamamelidaceæ:* Hamamelis, styrax.
 Myrtaceæ: Oleum cajeputi, eucalyptus, oleum myrciæ, caryophyllus, pimenta.
 Lythraceæ: Granatum.
17. *Cucurbitaceæ:* Colocynthis, bryonia, megarrhiza, pepo, citrullus.
 Cactaceæ: Cactus grandiflora.
18. *Umbelliferæ:* Conium, anisum, carum, fœniculum, anethum, apium, petroselinum, coriandrum, cuminum.
19. Sumbul, assafœtida, ammoniacum, galbanum.
 Caprifoliaceæ: Sambucus, viburnum prunifolium et opulus.
20. *Rubiaceæ:* Ipecacuanha, coffea, cinchona.
 Cinchona—continued.
21. *Valerianaceæ:* Valeriana.
 Compositæ: Eupatorium, grindelia, inula, anthemis, matricaria, Pyrethrum, tanacetum.
22. Absinthium, santonica, arnica, calendula, lappa, taraxacum, lactucarium.

23. *Lobeliaceæ:* Lobelia.
Ericaceæ: Uva ursi, gaultheria, chimaphila.
Sapotaceæ: Gutta percha.
24. *Styraceæ:* Benzoinum.
Oleaceæ: Oleum olivæ, manna.
Apocynaceæ: Apocynum, strophanthus, aspidosperma.
25. *Asclepiadaceæ:* Asclepias.
Loganiaceæ: Gelsemium.
Spigelia, nux vomica.
26. *Gentianaceæ:* Chirata, gentiana.
Hydrophyllaceæ: Yerba Santa.
Convolvulaceæ: Jalapa, scammonium,
27. *Solanaceæ:* Dulcamara, capsicum, belladonna, stramonium, hyoscyamus, tabacum.
28. *Scrophulariaceæ:* Digitalis, leptandra.
Labiatæ: Lavandula, mentha, origanum, thymus.
29. Hedeoma, salvia, rosmarinus, scutellaria, marrubium.
Chenopodiaceæ: Chenopodium.
30. *Phytolaccaceæ:* Phytoccacæ bacca et radix.
Polygonaceæ: Rheum, rumex.
31. *Aristolochiaceæ:* Serpentaria.
Piperaceæ: Cubeba, matico, piper.
Myristicaceæ: Myristica.
32. *Lauraceæ:* Cinnamomum, cassia, camphora, sassafras.
Thymelaceæ: Mezereum.
Santalaceæ: Oleum santali.
33. *Euphorbiaceæ:* Kamala, cascarilla, oleum tiglii, oleum ricini, stillingia, elastica.
34. *Urticaceæ:* Ulmus, humulus, cannabis, ficus.
Juglandaceæ: Juglans.
35. *Cupuliferæ:* Quercus, galla, castanea.
Salicaceæ: Salix, salicinum.
Coniferæ: Juniperus, sabina.
36. Turpentines, pitches, resina, creasotum, oleum succini.
37. *Orchidaceæ:* Vanilla, cypripedium.
Scitamineæ: Cardamomum, zingiber.
Iridaceæ: Iris, crocus.
38. *Liliaceæ:* Sarsaparilla, aloe, allium, scilla, convallaria.
39. Colchicum, veratrum.
Aroideæ: Calamus.
Graminaceæ: Amylum.
40. Maltum, saccharum, triticum, zea.
Lycopodiaceæ: Lycopodium.
41. *Filices:* Aspidium.
Algæ: Chondrus, fucus.
Lichenes: Cetraria.
42. Ergota, ustilago.

ANIMAL DRUGS.

43. *Class Insecta:* Cantharis, cera alba and flava, mel, coccus.
44. *Class Pisces:* Ichthyocolla, gelatin, oleum morrhuæ.
45. *Class Aves:* Ovum, albumin and other proteids.
46. *Class Mammalia:* Moschus, castoreum, fel bovis, sevum, saccharum lactis, carbo animalis.
47. Cetaceum, adeps, glycerinum, adeps lanæ.
48. Pepsinum, pancreatinum.

Senior Course.

In this course drugs are studied *comparatively* and in groups, points of resemblance and difference being shown, thus training the student in the observation of those characteristics by which the identity of each article may be established, its quality approximately judged, and substitutions and adulterations detected.

The details of pharmaceutical manipulations being dependent upon a knowledge of the *chemical composition* of the various drugs operated upon, a large portion of these lectures is devoted to this part of the subject, certain typical drugs being dwelt upon exhaustively, while others are considered in a less detailed manner.

Towards the close of the term the new synthetical remedies are studied, their chemical constitution, properties, uses and doses being carefully noted.

SYLLABUS.

1. *Roots*—Sarsaparilla, senega, gentiana.
2. Taraxacum, cichorium, pyrethrum, inula, lappa.
3. Apocynum, stillingia, sumbul, asclepias, phytolacca, althea.
4. Belladonna, bryonia, calumba.
5. Rheum, glycyrrhiza, ipecacuanha.
6. Gelsemium, pareira, krameria. *Rhizomes*—Aspidium.
7. Zingiber, calamus, veratrum.
8. Iris versicolor, cypripedium, sanguinaria, geranium.
9. Podophyllum, valeriana, arnica.
10. Serpentaria, spigelia, hydrastis, caulophyllum.
11. Cimicifuga, leptandra, menispermum.
12. *Tubers and Bulbs*—Jalapa, aconitum.
13. Colchicum, scilla.
14. *Woods*—Quassia, hæmatoxylon, santalum.
15. *Barks*—Cinchona.
16. Prunus virginiana, viburnum opulus et prunifolium.
17. Quercus, granatum, frangula.
18. Cascara sagrada.
19. Sassafras, cinnamomum, ulmus.
20. Quillaja, euonymus, juglans, xanthoxylum, mezereum.
21. Gossypium, cascarilla.

22. *Herbs*—Chondrus, cetraria, pulsatilla.
23. Eupatorium, grindelia, lobelia, mentha, absinthium, tanacetum.
24. Thymus, hedeoma, cataria, marrubium, chirata.
25. *Leaves and Leaflets*—Pilocarpus, eucalyptus, uva ursi, senna, buchu, coca.
26. Belladonna, stramonium, hyoscyamus, digitalis.
27. Matico, salvia, hamamelis, chimaphila, gaultheria.
28. *Leafy Tops*—Sabina, scoparius.
29. *Inflorescences, Flowers and Petals*—Cannabis, santonica, kousso, arnica, calendula, matricaria, anthemis, caryophyllus, sambucus.
30. *Fruits*—Cubeba, piper, pimenta, cocculus, capsicum.
31. Colocynthis, cassia fistula, humulus.
32. Xanthoxylum, illicium, cardamomum.
33. Coriandrum, conium, anisum, petroselinum, apium, carum, fœniculum.
34. *Seeds*—Physostigma, dipteryx, theobroma, cola.
35. Sinapis, nux vomica, staphisagria, asagrœa.
36. Myristica, stramonium, colchicum.
37. *Unclassified parts of Plants, etc.*—Lycopodium, kamala, galla, ergota.
38. *Inspissated Juices and Extracts*—Guarana, opium, lactucarium.
39. Aloe, catechu, kino, elastica.
40. *Sugars, &c.*—Saccharum, saccharum lactis, manna, mel, amylum.
41. *Gums and Gum-Resins*—Acacia, tragacantha, cambogia, asafœtida ammoniacum, myrrha, scammonium.
42. *Resins, Oleo-Resins and Balsams*—Mastiche, guaiaci resina.
43. Benzoinum, balsamum peruvianum et tolutanum, styrax, copaiba.
44. Terebinthina, terebinthina canadensis, pix burgundica, pix canadensis, pix liquida.
45. *Fixed Oils and Fats*—Oleum morrhuæ, oleum, tiglii, oleum theobromæ
46. Oleum ricini, oleum adipis, oleum lini, oleum amygdalæ, oleum olivæ.
47. Oleum cocois, adeps, adeps lanæ.
48. Cetaceum cera, paraffinum.
49. *Synthetical Remedies*—Salol, salicylic acid, acetanilid, sulphonal, antipyrin, phenacetin.
50. Piperazine, naphtalin, naphtol, resorcinum, ichthyol, iodol, aristol, etc.

BOTANY.

Lectures and Demonstrations by

PROFESSOR J. J. B. ARGENTI.

The course consists of a systematic series of lectures, supplemented by demonstrations with fresh and dried material, and by excursions in the field, where plants are studied under their natural conditions, thus making the instruction of practical value to the student.

The morphology of plants is entered into, attention being devoted principally to the higher forms of plants.

Organography is dwelt upon ; the terms employed in describing the parts and organs of plants are explained.

Organography gradually leads to the consideration of systematic botany or classification.

Under this head the several systems of classification will be explained and the characters of the more important families will be considered.

Students are required to make comparative studies of plants, their parts and organs, employing when necessary the simple microscope to aid them in dissection and investigation.

SYLLABUS.

1. Divisions of Botany. Explanation and demonstration of vegetative and floral parts.
2. The flower. Classification of flowers.
3. Inflorescence and its classification.
4. Parts of the flower ; calyx and corolla, their modifications.
5. Perianth and subsidiary organs.
6. Androecium, (stamens). Pollen.
7. Gynæceum. (Pistil.) Simple and compound pistils. Ovules. Fertilization.
8. Sexual system of Linnæus.

9—10. Fruit. Structure. Kinds and classification.

11. Seed. Structure. Character of mono, di- and polycotyledonous seeds.
12. Root. Kinds.
13. Stem. Modification and characters.
14. Buds. Aestivation and vernation.

15—16—17. Leaf. Simple and compound foliage leaves. Transitional forms. Modifications. Classifications of leaves.

18—19. Cryptogams. Characters and classification.

20. Systems of botanical classification.

21—26. General arrangement and consideration of characters of the divisions and families of phanerogams.

MICROSCOPY, VEGETABLE HISTOLOGY AND PHARMACOGNOSY.

Lectures and Demonstrations by

PROFESSOR J. J. B. ARGENTI.

Junior Course.

The junior course includes microscopy and vegetable histology.

The first part of the term is devoted to the principles of magnification, use of simple lenses as magnifiers, the construction of and princi-

ples involved in the parts and accessories of the compound microscope, and the manipulation and care of the instrument.

Next will be explained the manner of preparing fresh and dried material for sectioning, staining, mounting, etc.

Laboratory work will be done at the close of the lectures and demonstrations, whereby practice may be had in the various processes.

The second part of the term is devoted to instruction in vegetable histology. It includes the vegetable cell, its contents, the epidermal, fundamental and fibrovascular series of tissues, structure of cellular plants, structure of root, stem, leaf and seed of the higher plant forms, and the various processes of cell formation.

It is intended that this course be practical. The student being compelled to devote a portion of the time to laboratory practice is enabled to become familiar with the manipulation of dissecting and compound microscopes, preparation of material for investigation, etc.

A projection apparatus fitted with microscopic projecting attachment is used from time to time to make more clear the lectures. Sections of plants illustrating the various tissues, systems and organs of plant-anatomy are projected on the screen and explained by the lecturer.

By successive steps progress is made toward the advanced study of vegetable histology.

When found necessary the class is divided into sections in order that each student may obtain all the practice and supervision necessary.

SYLLABUS.

Section I, Microscopy.

1. Introduction, magnification, lenses, use of lenses as magnifiers.
2. Faults in lenses, correction of lenses, simple microscope, compound microscope, its construction, parts and uses.
3. The eye piece. The objective.
4. Various accessories employed with the compound microscope.

5 to 8. Preparation of material for preserving, sectioning, staining materials, staining of sections, mounting and finishing, temporary and permanent.

9. Drawing and photo-micrography.

Section II, Vegetable Histology.

10. The vegetable cell and its contents.
11. The cell wall, structure, markings and modifications.

12—13. Contents of cells, plastids, protein grains, inulin crystals, etc.

14. Starches.
15. Various processes of cell formation.
16. Modification of cells. Classification.
17. Tissues. Classification.
18. Epidermal system.
19. Fundamental system.

20. Fibrovascular system.
21. Sieve and latex systems.
22. Fibrovascular bundles—Collateral. Closed and open—Concentric, Radial.
23. Histology of root, stem, leaf and seed.
24—26 Comparative structure—Cryptogams, Phanerogams.

Senior Course—Pharmacognosy.

This course includes the application of the compound microscope in studying drugs of vegetable origin.

The parts of plants supplying drugs receive attention. The varieties, general and special characters and structure of each is considered as well also the substitutes, adulterants and admixtures.

Official drugs, crude, entire and in powder receive special attention. Type slides of each are supplied to the student for study of structture, etc.

Laboratory work consisting in preparation of mounted specimens, investigation with simple and compound microscope, detection of substitutes and adulterants, is followed throughout the term. Special attention is given in the following syllabus to official drugs: other important non-official drugs are also considered.

The projection apparatus is employed to illustrate the more important subjects treated of.

SYLLABUS.

1 to 8. *Roots and Rootlets.* Primary and secondary. Structure. Monocotyledons—Sarsaparilla (varieties). Dicotyledons—senega, gentiana, taraxacum, cichorium, pyrethrum, inula, stillingia, phytolacca, lappa, apocynum, asclepias, sumbul, althæa, belladonna, bryonia, calumba, rumex, rheum, ipecac, pareira, krameria.

9 to 13. *Rhizomes and Rootlets*—Characters and comparative structure of cryptogamous, monocotyledonous and dicotyledonous rhizomes. Cryptogamous rhizomes—Aspidium. Monocotyledonous rhizomes—Zingiber (varieties), calamus, veratrum viride, iris, triticum, cypripedium, convallaria. Dicotyledonous rhizomes—Sanguinaria, geranium, podophyllum, valeriana, arnica, serpentaria, spigelia, hydrastis, caulophyllum, cimicifuga, leptandra, menispermum, gelsemium.

14 to 15. *Tubers, Bulbs and Corns*—General and structural characters. Monocotyledons—Colchicum, scilla, allium. Dicotyledons—Jalapa, aconitum.

16 and 17. *Twigs and Woods.*—Twigs: dulcamara, Woods: quassia, hæmatoxylon, guaiacum, santalum rubrum.

18 to 21. *Barks*—General and structural characters. Cinchona (varieties), prunus virginiana, quercus alba, granatum, rubus, frangula,

rhamnus Purshiana, juglans, quebracho, xanthoxylum, mezereum, gossypii radix, viburnum prunifolinon, euonymus, quillaja, cinnamomum (varieties), sassafras.

22 to 27. *Herbs and Flowers*—Cryptogams—Chondrus, cetraria. Dicotyledons—Caryophyllus, arnica, pulsatilla, cannabis, indica, lobelia, mentha piperita, mentha veridis, hedeoma, marrubium, grindelia, matricaria, anthemis, tanacetum, calendula, chirata, sabina, absinthium.

28 and 32. *Leaves and Leaflets*—Rosmarinus, pilocarpus, eucalyptus, uva ursi, senna (varieties), erythroxylon, belladonna, tabacum, stramonium, hyoscyamus, digitalis, matico, salvia, hamamelis, castanea, buchu (varieties), chimaphila, eriodictyon, aconitum, toxicodendron, rhus, conium.

33 to 37. *Fruits*—Juniperus, humulus, rhus glabra, cubeba, piper (varieties), pimenta, anisum, carum, foeniculum, coriandrum, cocculus, capsicum (varieties), colocynthis, cassia fistula, illicium, cardamomum, vanilla.

38 and 42. *Seeds*—Cydonium, amygdala (varieties), pepo, cola, physostigma, sinapis (varieties), nux vomica, ignatia, staphisagria, linum, strophanthus, stramonium, hyoscyamus, colchicum, myristica.

43 to 46. *Drugs not Distinct Organs of Plants*—Ergota, sassafras medulla, macis, gossypium, crocus, stigmata maidis, fungus laricis lupulinum, mucuna, kamala, lycopodium, galla, guarana, kino, benzoin, aloe, lactucarium, tragacantha, acacia.

47 to 50. *Starches*—Wheat, potato, sago, tapioca, barley, oat, pea, bean, corn, rice, etc.

PHYSIOLOGY.

C. Hadley Carlson, M. D., Lecturer.

This course is intended to give the student an outline of the general principles of physiology, in order that he may have an intelligent idea of the action of medicines.

PHARMACEUTICAL JURISPRUDENCE.

H. R. Wiley, A. B., Lecturer.

1. Nature, sources and scope of Pharmaceutical Jurisprudence. The practical application of legal principles by the pharmacist. Discussion of the terms Apothecary, Druggist, Pharmacist. The limits of pharmacy.
2. Legal status of the pharmacist under Common Law; under Statutes of California. Constitutionality of Statutes. Acquirement of legal right to practice pharmacy; proof of such right in a court of law. General liability under Common Law.

3. Qualifications of pharmacist. Contractual relations between vendor and vendee of drugs; between pharmacist and the person at whose request he prepares a prescription. The degree of skill required of the pharmacist.
4. Liability of the pharmacist—civil, criminal. "Caveat emptor"—"caveat vendor." The three warranties. Ignorance. Negligence. Discussion of cases.
5. Defenses to criminal prosecutions. Defenses to civil suits for damages. Contributory negligence. Discussion of cases.
6. Discussion of the ownership of the physician's prescription. Safeguards. Trade marks.

TEXT BOOKS.

U. S. Pharmacopœia, 1890.

Organic Materia Medica, by J. M. Maisch.

U. S. Dispensatory, by Wood, Remington and Sadtler, or

National Dispensatory, by Stillé and Maisch.

Simon's Chemistry.

Remington's Practical Pharmacy.

Manual of Plant Histology, by Dudley and Thomas.

Bastin's College Botany.

Behr's Flora of the Vicinity of San Francisco.

Microscopical Methods, by S. H. Gage.

Remsen's Elementary Chemistry.

The Milk, the Urine and Poisons, by Holland.

A. H. Elliot's Qualitative Analysis.

Schimpf's Volumetric Analysis.

Elements of Physiology, by Starling.

REFERENCE BOOKS

Culbreth's Materia Medica and Pharmacology.

Helbing's Modern Materia Medica.

Sadtler and Trimble's Medical and Pharmaceutical Chemistry.

Quantitative Analytical Chemistry, by Clowes and Colman.

Caspari's Pharmacy.

In consequence of the delay which has frequently occurred in obtaining Text Books through the usual trade channels, the Alumni Association have arranged to import a full supply for the use of our Students. For particulars, as to cost, etc., apply to

E. P. Gates,
100 Stockton Street.

THE COLLEGE CALENDAR—1897.

February 1—Monday, entrance examination and matriculation.
February 3—Wednesday, opening of the College, assignment of seats and desks.
July 5—Monday, vacation one week.
Aug. 13—Friday, close of College work; tickets issued by the Dean for final examinations.
Aug. 16—Monday, Final Junior examinations begin.
Aug. 18—Wednesday, Final Senior examinations begin.

FEES.

To be paid in advance.

*Entrance Examination	$ 5 00
Junior Course	90 00
Senior Course	90 00
Diploma Fee to be paid but once, and not refunded in case of failure	20 00
Certificates of Proficiency, each	2 00

Each student is required to deposit with the Dean the sum of $15.00 for the breakage and damage fund. Any unexpended portion of this amount will be refunded at the close of the session.

EXAMINATIONS.

Periodical examinations are held from time to time during the session in each of the subjects taught by the several Professors.

These examinations are rated by the Faculty; and the rating, as shown by the results thus obtained, constitute important factors in determining the fitness of Juniors for promotion to the Senior class, or of Seniors who are candidates for graduation.

Attendance upon these examinations is compulsory. Any student unavoidably detained from being present is required to deliver to the Dean a statement in writing of the cause of his detention.

JUNIOR EXAMINATION.

(For Admission to the Senior Class.)

Junior students, whose rating shows satisfactory progress, receive certificates entitling them to admission to the Senior Class at any subsequent session of the College within three years.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, are required to produce evidence of their fitness, *or to pass an examination.*

*Those who present satisfactory credentials do not pay this fee.

SENIOR EXAMINATION.

Students in the Senior Class are examined for the degree of Graduate in Pharmacy at the end of the session, in Organic and Inorganic Chemistry, Toxicology, Botany, Materia Medica, Physiology, Chemical and Microscopical Characteristics of Drugs, their doses and uses; Microscopy and Vegetable Histology, Theoretical and Practical Pharmacy and the Translation of Prescriptions. The practical examination includes the actual compounding of Prescriptions, and the identification and manipulation of Drugs and Chemicals, in the presence of the Examiners.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least *two full courses*, may, at the end of the Senior Course, present himself for examination in CHEMISTRY, BOTANY, MICROSCOPY, and MATERIA MEDICA (including the identification of specimens), reserving the remainder of his examination until a subsequent year. He must give notice, in writing, to the Dean, on or before August 1st, of his intention to so divide his examination. If he pass in two or all these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the Degree of Graduate in Pharmacy.

IN BOTH SENIOR AND JUNIOR CLASSES

Students who take the entire examination at the close of the term, and fail in more than two branches, are required to remain another year in the same class, and to pass the examination in all branches at the end of the term. No additional fee is charged unless the student enters a third term in either class.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency will be issued to those students who, having elected to take the modified senior examination, shall have passed satisfactorily in *all of the branches* in which they were examined; also to special students who pass satisfactorily in their special subjects; also to those candidates who pass successfully in all branches, but are debarred from receiving their diplomas by lack of required experience, or by being under twenty-one years of age. The certificates will count towards the examination for the Degree of Graduate in Pharmacy; except that no student will be examined in *Pharmacy* until proof is received by the Faculty and Examiners that the candidate has had at least three and a half years' experience in a pharmacy where prescrip-

tions are compounded. No Certificate of Proficiency in Pharmacy will be issued, unless the student has satisfactorily passed in all the branches. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subjects as is required in the general average.

These certificates will be issued, when desired, upon the payment of two dollars each.

THE FEES must be paid to the Dean by each student, in person, in advance, or not later than thirty days from the opening of the term.

GRADUATES of the College, are privileged to attend at any future time.

Other students not intending to pursue Pharmacy as their vocation will be admitted to any of the courses they may desire to attend, by paying $5.00 entrance fee, and that of the chair or chairs of instruction which they wish to attend.

CONDITIONS OF GRADUATION.

Every person upon whom the Degree of Graduate in Pharmacy shall be conferred must fulfill the following conditions:

1. He must be of good moral character.

2. He must have attained the age of 21 years.

3. He must have attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy.

4. He must have had four years' experience in a pharmacy where physicians' prescriptions are compounded. (His time actually spent in this College will be allowed to count as part of this term of four years.)

5. He must present an account of some special work done in the Laboratory in lieu of a thesis, and exhibit some chemical or pharmaceutical product made under the supervision of the Directors of the Laboratories.

6. He must have attended at least three-fourths of the lectures, reviews and laboratory work.

No special examination will be held for candidates for the Degree, but only that at the end of the regular course.

Those who fail to pass satisfactorily will be allowed to present themselves again within two years, without further charge.

Candidates are recommended jointly by the Faculty and Examining Board to the Regents of the University, by whom the Degree is conferred.

RULES.

1. Students on entering must sign the roll, and subscribe to the rules of the College.

2. Fees must be paid at the opening of the session.

3. Students not answering to roll-call 15 minutes late will be marked absent.

4. To obtain a lecture certificate from the Professor, attendance is compulsory, unless exempted for sickness or special cause by the Board of Trustees.

5. Seats and sections in the lecture rooms and laboratory will be assigned to each student, which he must occupy during the session.

6. Each student will be held responsible for any damage or breakage to his seat or section, whether done by himself or others.

7. Any Student found willfully damaging or wasting the property of the College is liable to expulsion and fine.

8. Any Student who misbehaves in the class-room or elsewhere in the College building, or who refuses to make good any damage to College property, will be subject to immediate dismissal.

9. Students will not be allowed to loiter around, or impede the public highway in front of the College entrance.

10. Smoking on the premises is prohibited.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the College, and upon complying with all the requirements for graduation, (other than a four years' experience in the retail drug business), may receive a Certificate of Proficiency in Chemistry, Materia Medica, Microscopy and Botany, signed by the Faculty of the College.

PHARMACISTS ENTERING MEDICAL COLLEGES.

Graduates in Pharmacy of this College are allowed one year in the Medical Department of the University of California, and in the Cooper Medical College.

ALUMNI ASSOCIATION.

The Alumni Association of California College of Pharmacy was organized in 1882, to further the interests of the College and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintance with the older ones, and making the Association a valuable auxiliary in promoting the work of the College. The annual meeting is held in November.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $20 to $30 per month, and restaurants abound in which good meals can be had for from 15 to 40 cents. Single furnished rooms may be had without board, for from $5 to $10 per month.

EMPLOYMENT.

Situations as relief clerks while attending College may be obtained in drug stores, but the remuneration for such services is not great. Yet many of the students prefer to do some work of this kind during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influences to find employment for them.

GRADUATING CLASS, 1896.

Frank James Atkinson
Daisy M. Bowen
Edgar Bridgewater
Joseph Michael Campodonico
Edward Martin Cherry
Orlando Paine Crozier
John Joseph Crowly
Wellington Irving Clayes
Arthur Edgar Duprey
Emilio Attilio Ferrea
Edward Russell Hanlon
William John Haber
Vincent Walter Hopkins
Thaddæus Burton Houghton
William John Jackson
Eugene Aloysius Kiely
George Ashby Laubersheimer
George Henry Philip Lichthardt
George William Minstrell
Royal T. Moore
George Thomas Noe
Ada Marian Parr
Darius Leopold Perrone
Helen Grace Reynolds
Otto Scholl
Edward Louis Wegener

STUDENTS—CLASS OF 1896.

Seniors.

Name.	Residence.
Atkinson, Frank James	San Francisco
Bowen, Daisy May	San Francisco
Bridgewater, Edgar	Watsonville
Briggs, Armand Eugene	Hollister
Campodonico, Joseph Michael	San Francisco
Cherry, Edward Martin	San Francisco
Clayes, Wellington Irving	Stockton
Crowly, John Joseph	San Francisco
Crozier, Orlando Paine	Tustin
Dibert, Arthur John	Oakland
Dudley, Elizabeth	Dixon
Duprey, Arthur Edgar	Dixon
Enriques, Manuel Jr.	Los Angeles
Ferrea, Emilio Attilio	San Francisco
Haber, William John	San Francisco
Hanlon, Edward Russell	San Francisco
Hogan, Margaret Marie	Vallejo
Hopkins, Vincent Walter	Stockton
Houghton, Thaddeus Burton	Tulare
Kiely, Eugene Aloysius	San Francisco
Laubersheimer, George Ashby	Wilmington
Laurence, Joseph James	San Francisco
Leavy, Leonard Sumner	San Francisco
Lichthardt, George Henry Philip	Sacramento
McCarty, Elizabeth Mabon	Oakland
Minstrell, George William	Lakeport
Moore, Royal T	Stockton
Parr, Ada Marian	Sebastopol
Perrone, Darius Leopold	San Francisco
Reynolds, Helen Grace	Upper Lake
Rühser, Frederick William	San Francisco
Scholl, Otto	San Francisco
Talcott, Lida Louise	San Francisco
Wegener, Edward Louis	San Francisco

Juniors.

Angell, Harry Millington	San Francisco
Bahney, Luther William	Red Bluff
Barnickel, Bernhard	Weaverville
Baumeister, Edward Emory	San Francisco
Beauchamp, Harry Herschel	Orange Vale
Beck, Ignatius	San Francisco
Bocca, William Aloysius	San Francisco
Briggs, Walter David	Oakland
Burckard, John Frank	Los Angeles
Butler, William Henry	San Francisco
Carter, Frank Martin	Irvington
Cousins, Henry R	Hanford
Crum, Earl Leland	Alameda
Decoto, John Robert	Irvington
De Blaumford, D. Nicolaus	San Francisco
De Lancy, John	Oakland
Eggert, Frederick Howard	San Francisco

Name.	Residence.
Ehrenberg, Walter D'Artenay	San Francisco
Ehrenpfort, Louis August	San Francisco
Frazee, Henry De Witt	Santa Rosa
Frietas, Clarence Eliott	Stockton
Gamble, Frank Alexander	Elmira
Haderle, John Aloysius	San Francisco
Haight, Louis Montrose	Stockton
Hakes, Clinton Devillo	San Diego
Hardy, Lowell Edwin	Oakland
Hartmann, Frederich Adolph	San Francisco
Johnstone, Andrew Edward	Oakland
Kelly, Thomas	San Francisco
Kington, Frank Valentine	Santa Clara
Lassen, Henry Charles	Alameda
Lockwood, Frank Edgar	San Rafael
Logie, Thomas Patrick	San Francisco
Lubosch, Melvin	San Francisco
Magnus, Alexander	San Francisco
Maguire, Thomas Godfrey	San Francisco
Mahony, Joseph Jeremiah	San Francisco
McDermott, John Thomas	Oakland
McKay, Albert Luther	Tres Pinos
Mervy, Lito Alphonse	Oakland
Mish, Oswald Sim	San Francisco
Moore, Harry Chrisley	Lodi
Morrish, Frederick William	Grass Valley
Neblett, Walter Eugene	Clarksville, Tenn.
Otto, William H	San Jose
Pendleton, Erastus Otis Adolph	Golden Gate
Powell, Clay Hereford	San Francisco
Purlenky, George Philip	San Francisco
Robinson, Edward Coleman	Los Angeles
Rock, Peter	Alameda
Ryan, Morris	Fresno
Seymour, Albert Paul	San Francisco
Siebe, Henry Hermann	Shell Mound Park
Tilton, Etta M	Palo Alto
Turner, Frederick William	Irvington
Upp, Arthur Frank	San Francisco
Volberg, Frederick Ludwig	Alameda
Wallgren, Wilhelm Edward	San Francisco
Withers, George Milton	San Francisco
Witmer, John	Placerville
Wulzen, Diedrich J	San Francisco

GRADUATES.

Name	Residence	Year of Graduation
Abraham, Chas. J	San Francisco	1895
Adair, William H	San Francisco	1881
Atkinson, Frank J	San Francisco	1896
Airaldi, August	San Francisco	1892
Aitken, Louis S	Oakland	1890
Argenti, J. J. B	San Francisco	1881
Ayers, Walter W	U. S. Navy	1893
Bacon, Gaston E	San Francisco	1875
Bagley, Hubert F	San Francisco	1893
Bagot, Edward Albert	San Francisco	1892
Baily, Rich J., M. D.	San Francisco	1895
Ball, Henry A	Oregon	1884
Ball, Robert L	Oregon	1882
Bandel, Edward F	Pasadena	1894
Barbat, J. H., M. D	San Francisco	1880
Barbat, Josephine E	San Francisco	1884
Bare, Edward R. L	San Francisco	1892
Barrington, Charles L	San Francisco	1883
†Bauer, Fred C		1877
Bayly, Jr., Chas. A	San Francisco	1895
Beaizley, George T	San Francisco	1885
Beck, Henry M., M. D	San Francisco	1889
Beckett, F. Arthur	San Francisco	1883
Becker, Frank C	Merced	1895
Bernheim, Moses Ralph	San Francisco	1891
Besthorn, H. E. D	San Francisco	1884
Bilger, Frank W	Oakland	1889
Blum, Joseph H	San Francisco	1894
Bodkin, Thomas P., M. D	San Francisco	1887
Bond, Frederick T., M. D	San Francisco	1886
Borchers, Adolph W	San Francisco	1889
Boswell, Frank M	Los Angeles	1886
Bowen, Charles P., M. D	New York	1889
Bowerman, Kenneth B	San Francisco	1893
Bowen, Daisy M	San Francisco	1896
Bridgewater, Edgar	Oakland	1896
Bratton, Fred O	San Francisco	1886
Broderick, Daniel J	San Francisco	1894
Brown, Jos. H	San Francisco	1895
Burnett, G. G	San Francisco	1879
Burnett, George W	San Francisco	1893
Bussenius, Adolph G	San Francisco	1888
Calegaris, Joseph	San Francisco	1882
Callender, Ernest G	Los Angeles	1891
Campodonico, Jos. M	San Francisco	1896
Cavagnaro, A. A	San Francisco	1892
Chard, George R	San Francisco	1881
Cherry, Edw. M	San Francisco	1896
Clayes, Wellington L	San Francisco	1896
Chilson, Henry G		1891
Christopher, John F	San Francisco	1895
Cleary, Stephen, M. D	San Francisco	1890
Chapman, Clarence H	Los Gatos	1893
Cerf, Joseph Leon	San Francisco	1891
Cody, Nelson A	Merced	1881
Cogswell, Frederick	U. S. Navy	1892

†Deceased.

Name	Residence	Year of Graduation
Collin, Francis Jesse	San Francisco	1891
Conlan, F. J	Nevada City	1894
Connolly, Thomas W	San Francisco	1894
Cottle, Harold S	San Jose	1895
Cox, Levitt H	San Francisco	1889
Crew, Henry W	Chico	1887
Crowley, Thomas J	San Francisco	1892
Crowley, John J	San Francisco	1896
Crozier, Orlando P	Tustin, Cal	1896
Curragh, John M	San Francisco	1887
Cummins, J. W	Oroville	1895
Davis, Thomas H	San Francisco	1891
Davis, William J	Oakland	1885
D'Artenay, Eugene	San Francisco	1882
†Delicat, John F. A		1888
Des Marais, Lafayette N	Oakland	1892
Devine, John	Santa Monica	1877
Dewitt, James M	San Francisco	1881
Dick, William H		1884
Dignan, Michael H	Santa Rosa	1883
Donaldson, John G	Oakland	1891
Donnelly, Francis J	Oakland	1893
Dore, C. W	Berkeley	1895
Dorrance, Ralph G		1885
Dowdall, Richard J	San Francisco	1894
Driscoll, Edward P., M. D	San Francisco	1888
Driscoll, Frederick A	San Francisco	1887
Driscoll, Frank I	San Francisco	1891
Drossel, August A., M. D	San Francisco	1886
Drossel, Joseph H	San Francisco	1893
Dubois, Paul A	San Francisco	1880
Dufficy, George W	San Francisco	1893
Duprey, Arthur E	Dixon, Cal	1896
Duncan, Frank T	San Francisco	1895
Edwards, William	San Francisco	1892
Elwert, Charles P., M. D	New York	1881
Emde, George H	Lodi	1894
Emerson, Horatio B., M. D	San Francisco	1888
Ferrea, Emilio A	San Francisco	1896
Fairbanks, Chas. D	Santa Ana	1895
France, William M	San Francisco	1894
Fevrier, J. P	San Francisco	1881
Fitzell, Charles R	Eureka, Cal	1883
Fitzell, Lincoln	Eureka, Cal	1889
Fletcher, David M	San Francisco	1881
Flint, George E		1888
Folkers, Oscar H	San Francisco	1893
Fox, Jay Ernest	Oakland	1892
Fox, Albert S	Placerville	1889
Gardner, Frank A	Washington	1891
Gates, Emery P	San Francisco	1887
Gerdes, Henry G	San Francisco	1889
Gibson, Martin R	San Francisco	1891
Gienger, Charles J	San Francisco	1892
Gilbride, Philip J	San Francisco	1891
Green, George A	San Jose	1893
Green, Franklin T	San Francisco	1882
Green, John A	Sacramento	1883

†Deceased

Name	Residence	Year of Graduation
Gove, D. M	San Francisco	1881
Graham, Thomas D	San Francisco	1875
Grazer, F. A., M. D	San Francisco	1880
Grossman, Edward L., M. D	San Francisco	1891
Gydison, Carl T. L	Salinas	1895
Hawkins, Geo. W., M. D	San Francisco	1895
Hance, Bowen Forrest	Los Angeles	1891
Hanson, Geo. F., M. D	San Francisco	1892
Haber, William J	San Francisco	1896
Hanlon, Edw. R	San Francisco	1896
Harris, Louis	Fresno	1891
Hawkes, Robert H	Oakland	1892
Hall, Benjamin F	Palo Alto	1889
Haman, Henry	San Francisco	1887
Hammit, Charles H	San Francisco	1881
Happersberger, Emil	San Francisco	1882
Hahman, Paul T	Santa Rosa	1885
†Harris, Henry R		1876
Harvey, George J	San Francisco	1889
Hazen, Edward A	Agnews	1894
†Heaney, J. P		1874
Hedrick, Walter M	San Francisco	1893
Heider, Frank B	Oakland	1889
Heinzeman, Edward A	Los Angeles	1892
Helke, W. S	Sacramento	1878
Henderson, David L	Sutter Creek	1888
Higby, Edward P	Oakland	1894
Higgins, Charles C	San Francisco	1888
Hirst, Charles P	Berkeley	1893
Hoover, Ulysses G	San Francisco	1890
Hopkins, Vincent W	Stockton	1896
Houghton, T. B	San Francisco	1896
Hueter, Gustave A	San Francisco	1890
Hughes, Samuel F	San Francisco	1886
Hughes, Thomas H., M. D	San Francisco	1886
Hulting, B. F	San Francisco	1880
Hund, George B	San Francisco	1892
Hurtzig, W. F. N	San Francisco	1881
Inman, Thos. G	San Francisco	1892
Ing, John C. Jr	Sacramento	1887
Inman, Pratt C	San Rafael	1895
Jackson, William J	Oakland	1896
Janeck, Frederick L		1892
Johns, Thomas Edwin	Los Gatos	1892
†Jones, Morgan L		1883
Joy, Edwin W	San Francisco	1878
Johnson, William P	Los Gatos	1893
Jones, Adial S	Placerville	1895
Judson, Russell H	San Francisco	1882
Kahn, Adolph J., M. D	Napa	1875
Keefe, John J	San Francisco	1890
Kelsey, Harry D	Berkeley	1888
Kelsey, John Edson, M. D	Arroyo Grande	1891
Kelton, Julian V	Ukiah	1894
Kellogg, Wilfred H., M. D	Palo Alto	1892
Kidd, Albert J	St. Louis, Mo	1894
Kiely, Eugene A	San Francisco	1896
King, William H. V	Redwood City	1891

†Deceased.

Name	Residence	Year of Graduation
Korper, Harry W.	San Francisco	1883
Krause, Frederick L	Oakland	1884
Ladd, Henry	San Francisco	1891
†Lann, William Henry		1892
Laubersheimer, Geo. A.	Wilmington	1896
Leber, Albert L.	Oakland	1884
Leith, H. von der	San Francisco	1893
Leet, Robert Andrew	Oakland	1891
Legge, Robert T.	San Francisco	1891
Leithold, John V	Woodland	1890
Lengfeld, Felix	Chicago	1880
Lengfeld, Jos. L	San Francisco	1895
Levison, Charles G., M. D	San Francisco	1884
Leszynsky, Samuel	San Francisco	1880
La Rue, D. Duke	Stockton	1894
Lichtenstein, Max	San Francisco	1894
Lichthardt, G. H. P.	Sacramento	1896
Lindsay, Frederick G	San Francisco	1883
Link, Victor A	Mexico	1890
Lovotti, Frederico	San Francisco	1891
Lucchetti, Victor F.	San Francisco	1894
Loehr, George W	San Francisco	1884
Logan, M. H., M. D.	San Francisco	1887
Lustig, Daniel David, M. D.	San Francisco	1881
Maloney, James J.	San Francisco	1888
Mardis, Benjamin A., M. D.		1890
Mathewson, J. McL.		1879
Mayer, Oscar J., M. D.	San Francisco	1885
McCarthy, James H.	San Francisco	1888
McDonnell, S. A.	San Francisco	1878
McKenny, William B.	Olympia, Wash.	1893
McKenny, Samuel M.	Olympia, Wash.	1893
McLaughlin, W. H., M. D.	San Francisco	1878
†McLean, F. P.		1875
McMurdo, John R., M. D	San Francisco	1887
†McNamara, John A.		1893
McQueen, H. M.	San Francisco	1895
Medros, Joseph J., M. D.	Oakland	1890
Mendel, Louis Carl	Antioch	1893
Mervy, Emil C., M. D.	San Francisco	1879
Messing, L. J.	Fresno	1879
Meyer, August W.	Honolulu	1885
Meyers, Robert C., M. D.	San Francisco	1875
†Minor, George W.		1879
Minstrell, Geo. W.	San Francisco	1896
Miller, H. L.	Jacksonville, Or.	1895
Mohun, Charles C., M. D.	San Francisco	1887
Molony, Edward J.	Stockton	1886
Moore, Berkeley W.	Stockton	1883
†Moore, C. C.		1878
Moore, Royal T.	Stockton	1896
Morgan, Charles L., M. D.	San Francisco	1886
Morgan, Henry F., M. D.	New York	1889
Morrison, W. P.	San Francisco	1880
Munson, James G.	San Jose	1884
Munter, Leo.	Oakland	1895
†Murphy, Martin J.		1881
Nash, Bert	San Francisco	1994

†Deceased.

Name	Residence	Year of Graduation
Newman, Felix H.	Monterey	1891
Newby, Thomas S.	Ventura	1884
Newton, John C.	San Francisco	1895
Nicholls, Horace S.	Healdsburg	1887
Nightingale, Joseph B.	San Francisco	1892
Noe, George T.	Auburn	1896
Oberdeener, George.	Stockton	1884
Oberdeener, Samuel.	Santa Clara..	1880
O'Grady, James J.	U. S. Navy	1891
O'Neil, Ambrose E.	San Francisco.	1889
Olds, George L.	San Francisco.	1891
Onesti, S. J.	San Francisco.	1895
Orena, Arthur G.	Los Angeles.	1887
Painter, George L., M. D.	San Francisco.	1892
Parker, E. S.	Sacramento	1878
Parker, Scollay, M. D.	San Francisco	1893
Patton, William J.		1885
Parr, Marian Ada.	Sebastopol	1896
Patterson, Frank F.	San Francisco	1891
Peck, Samuel S., B. S.	San Francisco	1892
Perkins, Philip J.	San Francisco.	1887
Perrone, Darius L.	San Francisco	1896
Petrie, Frank B., M. D	San Francisco	1888
Pooler, Chester B.	Santa Rosa	1892
Polk, Charles W.	Watsonville	1892
†Potter, Grace M.		1892
Potter, Frank L.	Oakland	1894
Powell, W. C.	San Francisco	1895
Preuss, John	Marshfield, Or	1892
Prien, Harry F.	San Francisco.	1885
Prosser, Sanford S.	Philadelphia	1891
Puck, Richard F.	Crescent City	1894
Ralston, Frank W.		1888
Ray, Fred E.	Sacramento	1876
Rees, David R.	Livermore	1892
Reilly, Eugene C.	Oakland..	1885
Reilly, Paul H.	Oakland	1883
Reynolds, Helen G.	San Francisco	1896
Rimpau, Frank T.	Santa Barbara	1883
Roche, Thomas B.	San Francisco.	1892
Rogers, Nathan, M. D.	San Francisco	1876
Root, George A.	San Francisco	1888
Ross, George I	Stockton	1893
Roturier, Emil.		1883
Rowe, Frederick W.	Oakland	1890
Rubel, Chas. C.	Marysville	1895
Ryan, Peter A.	Redwood City	1892
Samuels, Edward H., M. D.	San Francisco	1891
Sanborn, William M., M. D.	Oakland	1888
Scamell, William J.	San Francisco.	1893
Scherb, Louis Henry.	Fort Grant, Ariz.	1893
Schmelz, Charles J., M. D.	San Francisco	1885
Schmidt, Edwin V.	San Francisco	1890
†Schneider, Henry R.		1891
Scholl, A. L., M. D.	San Francisco.	1881
Scholl, Otto	San Francisco.	1896
Schwartz, Harry	San Francisco..	1891
Seifert, Charles A	Oakland	1887

†Deceased.

Name	Residence	Year of Graduation
Selzer, Edward, M. D	Oakland	1877
Sharp, Sol A	San Francisco	1892
Shaw, Herbert G	San Francisco	1894
Shumate, Thomas E., M. D	San Francisco	1895
Simmons, Hayden M	San Francisco	1890
Skilling, Harry H	Oakland	1885
Skinner, Edwin E	Eureka, Cal	1886
Skinner, John Bryant	San Francisco	1892
Skinner, Robert W	Eureka, Cal	1883
Smith, Arthur H	San Francisco	1879
Smith, Kirby B	Lorin, Cal	1890
Sommer, Adolph	New York	1879
Spiro, Harry	San Francisco	1893
Squires, Harry J	Berkeley	1890
Stange, Carl F	U. S. Navy	1894
Stock, William S., B. A	Portland, Oregon	1892
Stone, Bertha I	San Francisco	1894
†Thevenet, Ernest J		1888
Topley, James H	Vallejo	1885
Topley, William H	Vallejo	1888
Tobriner, Ike	Oakland	1893
Trask, Henry C., M. D	San Francisco	1890
Trautz, Otto George	Benecia	1891
Troppmann, Charles M	San Francisco	1881
Tryon, James W	Sacramento	1882
Turner, Guy S	Modesto	1885
Upp, William A	San Francisco	1893
Ullman, Fred G	San Francisco	1895
de Urunuela, N. R	Acapulco, Mexico	1895
Van Werthern, Joseph, M. D	San Francisco	1889
Villain, Albert John, M. D	San Francisco	1892
Volkmann, Martin F		1891
Vogel, Rudolph Fred	Los Angeles	1893
†Vreeland, Ph. L		1879
Ware, John Hiram	Portland, Or	1891
Wagner, Allen C	San Jose	1889
Wall, Henry A	Olympia, Wash	1883
Waller, Julian L	San Francisco	1889
Waller, Samuel Leroy	San Francisco	1893
Walsh, Andrew D	Redwood City	1884
Warren, Joseph S	San Francisco	1887
Wechsler, Paul	Germany	1892
Wegener, Edward L	San Francisco	1896
Weihe, Otto A	San Francisco	1889
Weiss, Philip	San Francisco	1878
Westlake, Leonard J	Nevada	1891
Whiting, Eugene C	San Francisco	1893
White, Thomas J	San Francisco	1888
Whitney, William B	Healdsburg	1884
Wise, Matthew S	San Francisco	1893
Williams, Laurence R	Oakland	1889
Wight, David	Oakland	1888
Wollenberg, Charles M	San Francisco	1894
Worth, Thomas	San Francisco	1891
Wulzen, Diedrich H. Jr	San Francisco	1887
†Young, Wilfred M		1882
Zemansky, J. H	San Francisco	1878

†Deceased.

ALUMNI ASSOCIATION OF THE CALIFORNIA COLLEGE OF PHARMACY.

Officers.

PRESIDENT:
GASTON E. BACON.

1st VICE-PRESIDENT:
ROBERT T. LEGGE.

2nd VICE-PRESIDENT:
ROYAL T. MOORE.

REGISTRAR:
OTTO A. WEIHE.

TREASURER:
JOS. S. WARREN.

SECRETARY:
EMERY P. GATES, 100 Stockton St.

TRUSTEES:

JEROME J. B. ARGENTI, 2 years.
H. M. McQUEEN, 2 years.
G. E. BACON, 1 year.
EMERY P. GATES, 1 year.
EDW. A. BAGOT, 2 years.
J. S. WARREN, 1 year.
R. E. DOWDALL, 2 years.

Members of the Alumni Association of the California College of Pharmacy.

Life Members.

JEROME J. B. ARGENTI, HENRY E. D. BESTHORN,
G. E. BACON, F. A. BECKETT,
JOHN DEVINE, EMERY P. GATES,
MARTIN R. GIBSON, FRED A. GRAZER, M. D.
FRANKLIN T. GREEN, CHARLES J. SCHMELZ, M. D.
C. A. SEIFERT, JOSEPH S. WARREN,
SAM'L OBERDEENER, JAS. H. TOPLEY,
OTTO A. WEIHE.

Name	Class	Address
Abraham, Chas. J.	1895	1144 McAllister St., S. F.
Argenti, Jerome J. B.	1880	2944½ Mission St., S. F.
Atkinson, F. J.	1896	1516 Mission St., S. F.
Airaldi, August	1892	7th and Howard Sts., S. F.
Bacon, Gaston E.	1875	2645 Sacramento St., S. F.
Bagley, Hubert	1893	108 Stockton St., S. F.
Bagot, Edward A.	1892	Hayes and Webster Sts., S. F.
Bandel, Edward F.	1894	Pasadena, Cal.
Barbat, J. Henry, M. D.	1880	1618 Folsom St., S. F.
Barbat, Josie E.	1884	3700 California St., Alameda
Bayly, Chas. A., Jr.	1895	Grant Ave. and Sutter St., S. F.
Beaizley, Geo. T.	1885	3 Montgomery St., S. F.
Beckett, F. A.	1883	220 Sutter St., S. F.
Beck, H. M., M. D.	1889	32 O'Farrell St., S. F
Besthorn, H. E. D.	1884	38 First St., S. F
Bernheim, M. R.	1891	Ellis and Buchanan Sts., S. F.
Bilger, Frank W.	1889	Oakland, Cal.
Blum, Jos. H.	1894	1421 Geary St., S. F.
Borchers, Adolph W.	1889	Mack & Co., S. F.
Boswell, Frank M.	1887	Los Angeles, Cal.
Bowerman, K. B.	1893	Sutter and Polk Sts., S. F.
Broderick, Dan'l J.	1894	102 Eddy St., S. F.
Bridgewater, Edgar	1896	435 Buchanan St., S. F.
Callender, Ernest G.	1891	Los Angeles, Cal.
Cavagnaro, August A.	1892	1011 Jackson St., S. F.
Cerf, Joseph L.	1891	1001 McAllister St., S. F.
Christopher, J. F.	1895	160 Golden Gate Ave., S. F.
Cherry, E. M.	1896	1304 Pine St., S. F.
Cleary, Stephen, M. D.	1890	Richmond District, S. F.
Conlan, Francis J.	1894	Nevada City, Cal.
Connolly, Thomas W.	1894	Mare Island
Cogswell, Fred L.	1892	1045 Market St., S. F.
Cox, Levitt H.	1889	Polyclinic, 406 Ellis St., S. F.
Crozier, O. P.	1896	435 Buchanan St., S. F.
Crowley, Thos. J.	1892	305 Kearny St., S. F.
Crowly, John J.	1896	646 Valencia St., S. F.
D'Artenay, Eugene	1882	Cor. 24th & Potrero Ave., S. F.
Devine, John	1879	Santa Monica, Cal.
Des Marais, L. N.	1892	1154 E. 14th St., Oakland
Donaldson, John G.	1891	1801 San Pablo Ave., Oakland
Dore, C. W.	1895	2110 Magee Ave., Berkeley, Cal.
Dowdall, Richard J.	1894	318 18th St., S. F.

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Drossel, Aug. A., M. D.	1886	Cor. Powell & Jackson Sts., S. F.
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Duncan, F. T.	1895	558 Folsom St., S. F.
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Emde, George H.	1894	Lodi, Cal.
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Mardis, Benj. A., M. D	1890	St. Luke's Hospital, S. F.
Medros, Joseph J., M. D	1890	1728 8th St., Oakland, Cal.
Mendel, L. C	1893	Antioch, Cal.
McCarthy, James H	1888	202 Stockton St., S. F.
McQueen, H. M	1895	400 Sutter St., S. F.
Miller, H. L	1895	Jacksonville, Oregon
Minstrell, G. W	1896	California and Hyde, S. F.
Moore, R. T	1896	Stockton, Cal.
Nash, Bert	1894	Sutter & Devisadero St., S. F.
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Volkman, Martin F	1891	San Francisco
Walsh, Andrew D	1884	Redwood City, Cal.
Wagener, Allen C	1889	89 N. 1st St., San Jose, Cal.
Warren, Jos. S	1887	1144 McAllister St., S. F.
Waller, Julian L	1889	33 Grant Ave., S. F.
Wegener, E. L	1896	1421 McAllister St., S. F.
Weihe, Otto A	1889	Cal. and Steiner Sts., S. F.
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In order to conform to the custom of Eastern Medical Colleges, and of the Academic Departments of this University, the Faculty has determined to abandon the plan heretofore pursued, of conducting the sessions during the spring and summer months. The sessions begin September 1st, and continue eight calendar months.

Attendance is required upon four annual courses of lectures. Graduates of recognized literary or scientific colleges, and those who have attended two years of the Natural Science course of a recognized university, and graduates of Pharmaceutical colleges in good standing, are admitted to the second course without examination.

FEES.

Matriculation Fee (paid but once)	$ 5
Demonstrator's Ticket for each of two years	10
Fee for each Course of Lectures	100
Graduating Fee (paid but once, but not returnable)	25

For further information address the Dean,

DR. R. A. McLEAN,

305 Kearny Street, San Francisco.

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HARRY P. CARLTON, D. D. S., Instructor in Operative Technic.

C. A. LITTON, D. D. S., Superintendent of Infirmary.

M. J. SULLIVAN, D. D. S., Instructor in Clinical Operative Dentistry.

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W. E. Price, D. D. S.
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The Session of 1897–98 begins Sept. 6th, and ends May 31st, 1898.

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In accordance with a rule adopted by the National Association of Dental Faculties, requiring three years' attendance of all matriculates, matriculates who are graduates in Medicine will be admitted to the second year without examination.

Graduates of the Dental Department are admitted to the Medical Department as students of the second year without examination.

FEES.

Matriculation (paid but once)	$ 5 00
Lecture Fees (each year)	100 00
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UNIVERSITY OF CALIFORNIA

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Elements of Physiology and Histology
Anatomy
Dissection
Botany

Second Year

Physiology and Comparative Physiology
Anatomy of the Domesticated Animals and Comparative Anatomy
Principles and Practice of Veterinary Surgery
Principles and Practice of Equine Medicine
Principles and Practice of Bovine Medicine
Materia Medica
Analytical and Organic Chemistry
Toxicology
Dissection
Clinical Instruction
Therapeutics

Third Year

Principles and Practice of Veterinary Surgery
Principles and Practice of Equine Medicine and Dermatology.
Principles and Practice of Bovine Medicine
Principles and Practice of Canine Medicine and Helminthology
Veterinary Obstetrics
Bacteriology
Pathological Anatomy
Veterinary Hygiene
Clinical Instruction
Therapeutics

Lectures on special subjects will be delivered from time to time throughout the session.

The second and third year students, besides attending the clinics must serve as aids in the Hospital, and the third year they will be placed in charge of sick animals and required to make autopsies.

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DEPARTMENT OF PHARMACY

UNIVERSITY OF CALIFORNIA

PROSPECTUS

OF THE

TWENTY-SIXTH SESSION

OF THE

California College of Pharmacy

113 FULTON STREET, SAN FRANCISCO, CAL.

Between Polk Street and Van Ness Avenue

SESSION OF 1897-8

Matriculation and Entrance Examination, Monday, November 1st, 9 A. M.

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CALIFORNIA COLLEGE OF PHARMACY
1897

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HERMANN H. BEHR, M. D., Emeritus Professor of Botany.

JOHN CALVERT, Ph. C., Emeritus Professor of Pharmacy.

WILLIAM T. WENZELL, M. D., Ph. G., Ph. M., Professor of Chemistry.

WILLIAM M. SEARBY, Ph. C., Professor of Pharmacy, Director of the Pharmaceutical Laboratory and DEAN.

J. J. B. ARGENTI, Ph. G., Professor of Botany, Materia Medica, Microscopy, Vegetable Histology and Pharmacognosy.

FRANK T. GREEN, Ph. G., Professor of Analytical Chemistry, and Director of the Analytical Laboratory.

C. HADLEY CARLSON, M. D., Lecturer on Physiology.

H. R. WILEY, A. B., LL. B., Lecturer on Pharmacal Jurisprudence.

ROBERT A. LEET, Ph. G., Instructor in Chemistry.

J. S. WARREN, Ph. G., Instructor in Pharmacy and Assistant in the Pharmaceutical Laboratory.

O. A. WEIHE, Ph. G., Instructor in Materia Medica.

H. M. McQUEEN, Ph. G., Instructor in Microscopy, Vegetable Histology and Pharmacognosy.

H. B. GRAHAM, A. B., Instructor in Latin.

COLLEGE CALENDAR.

1897.

October 30—SATURDAY, matriculation on credentials.

November 1—MONDAY, entrance examination begins.

November 2—TUESDAY, entrance examination closes.

November 3—WEDNESDAY, Opening of College. Assignment of seats and desks.

November 25—THURSDAY, Thanksgiving Day. No College work.

December 24—FRIDAY, last session of the College before Christmas vacation.

1898.

January 3—MONDAY, Lectures and laboratory work resumed.

February 22—TUESDAY, legal holiday.

March 23—WEDNESDAY, Charter Day (University of California). No College work.

May 27—FRIDAY, last day of College work.

May 30—MONDAY, Decoration Day. No College.

May 31—TUESDAY, Junior examination begins.

June 2—THURSDAY, Senior examination begins.

June 14—TUESDAY, Board of Regents meet to confer degrees.

ANNOUNCEMENT.

Arrangements for changing the sessions of the College from summer to winter terms having now been completed, persons intending to enter will prepare to meet the entrance requirements in autumn instead of spring, as heretofore.

Increase of Hours.—The session of 1897–'8 will be marked by several advance movements, among which will be an extension of the time of instruction so as to embrace twenty-four hours' actual teaching and laboratory practice each week for a period of about thirty weeks. The work in the Chemical and Pharmaceutical Laboratories will each be increased fifty per cent., that in Vegetable Histology and Pharmacognosy in about the same proportion, the lectures on Physiology will be doubled in number, those on Chemistry will be increased one-third, and a course in Physics in relation to Chemistry will be added to the Junior course. Organic Materia Medica and Pharmacognosy, being closely allied to each other, will be taught by the same professor, and Inorganic Materia Medica by the Professor of Pharmacy. The course of lectures on Pharmaceutical Jurisprudence will be extended, being of much value to the pharmacist as a business man. Reviews will be conducted in Chemistry, Botany, Materia Medica, Pharmacy, Vegetable Histology, Microscopy, Pharmacognosy and Physiology, as heretofore.

The Laboratories.—The three laboratories, Chemical, Pharmaceutical and Microscopical, are now fully equipped, and the large amount of work which the student has to do in each of them gives a practical knowledge which cannot be acquired in any other way. *The various operations being performed under the eyes of the professors, errors, inaccuracies and undesirable methods are promptly corrected;* and as this work is systematically arranged and closely in touch with the lectures delivered by the professors, a completeness is given to the instruction that cannot otherwise be attained.

Personal Instruction.—No College of Pharmacy in the United States secures for each individual student, in its course for the degree of Graduate in Pharmacy, a larger amount of personal contact between professor and pupil. The instruction is thoroughly practical, as it touches the problems that arise in the daily life of the pharmacist. Considerable time will be

devoted in the ensuing term to the Dispensing Department, and everything will be done to render the instruction of the greatest permanent value to the student.

Fees.—Notwithstanding the large increase in instruction given to the students by the Faculty and the additional expenses of the extended laboratory courses, the fees have been but slightly augmented, being now $100 a term, as charged by other leading colleges.

Medical Students.—As the graduates of this College are credited one year in the Medical Department of the University of California, in Cooper Medical College and in the College of Physicians and Surgeons, the outlay to a prospective student of medicine who takes a course in the California College of Pharmacy, prior to entering upon the study of medicine, is much less than the benefit to be derived.

Special Students.—The advantages of this College are offered to such persons as may wish to receive the benefit of the instruction and laboratory work, but who from any cause are unable to matriculate with a view of obtaining the diploma. They can enter as special students in any or all of the subjects taught by paying the fees for such as they take.

Value of a Pharmacy Course to Physicians and Technologists.—Of those who have been students in this College, many have afterwards become physicians or have entered upon some branch of Chemical Technology. These persons uniformly bear testimony to the value of the instruction here received, as helpful to them in their subsequent career. Physics teaching the general laws of matter and the forces of nature, Chemistry dealing with the relation of one kind of matter to another, Botany and Vegetable Physiology telling much of the vegetable productions of nature, Materia Medica as studied by pharmacists giving the chemical constitution of these vegetable products, the laboratory teaching giving facility and delicacy of manipulation in manufacturing, analytical and microscopical work—all these tend to fit the student for many occupations beside pharmacy, so that in his future career he may see opportunities which one with less education in these lines fails to see, or seeing, is unable to divert to his own advantage. Physicians who had taken a pharmacy course before entering a medical college all speak with self-congratulation upon this fact and declare that the advantages they derived were ample compensation for the time and money expended in this work.

Value of a College Education.—There is no time when it is so imperatively necessary to the business man that he

should understand his business as when times are hard. There is no time when the professional man who does not understand his profession is so sure to be left behind as in hard times. Whether times be good or bad, the man who has the best chance in life is the one who best understands his calling, be it a trade, a business, or a profession. Just now the business that is suffering more than any other is that of the druggist, and there never was a time when ordinary prudence and common sense indicated in such unmistakable terms the necessity of his having a good, practical pharmaceutical education, as the present.

Look Ahead.—This especially affects those who look forward to spending a number of years in the drug business. It is simply folly for one to start out in life as a pharmacist in these days without the equipment for the battle of life which a practical education furnishes. In ten years, certainly in twenty-five, pharmacy will have undergone such modifications that only those who understand the scientific part of their calling, as well as its trade side, can expect to succeed. The pharmacist in middle life in A. D. 1910 who has only acquired such a smattering of the scientific matters pertaining to his business as come under his notice from day to day in the drug-store will be handicapped by his want of exact knowledge, and will see, to his chagrin, others who have had a better pharmaceutical education than he, reaping the golden harvest, while he stands by and carps and criticises and blames the times for his want of success. A few years ago it seemed as if it were optional whether one should acquire a scientific pharmaceutical education or not, and hence many drifted along in the old way, only the more enterprising entering a College of Pharmacy; but now it is different. The signs of the times indicate unmistakably that the pharmacist of the future must be an educated man. Every wise man now engaged in pharmacy should regard no sacrifice that he can make too great to secure a thorough theoretical and practical education in pharmacy.

The Requirements for Admission, being now made to cover the first year's work in the High Schools of this State, those who are intending to enter College should make sure that they can fulfill this condition. If they cannot produce certificates showing that they have satisfactorily completed the studies named, they should earnestly apply themselves to make up their deficiencies in this direction before presenting themselves for the entrance examination. The effort thus put forth will be of the greatest value to them, not only during their College career, but in all their future life. At an early

date two years' High School work will be required for matriculation.

Previous Experience in Drugstores.—Applications are frequently made by persons who wish to enter the College before they have had any experience in pharmacy. In such cases the Directors advise the applicants to find employment in a drugstore for at least a year before attending college, unless they are about to take a course in Pharmacy preparatory to entering a medical college, or to some calling other than Pharmacy, in which case their age and other circumstances will largely determine their action.

Graduation.—Nearly all of the Colleges of Pharmacy on this continent confer the degree of Graduate in Pharmacy only upon those who have had four years' drugstore experience, including the time actually spent at college. The California College of Pharmacy still adheres to this custom, but permits the student, when he has completed his college course, to take all the examinations, practical as well as theoretical, and if he pass satisfactorily, recommends him without further delay to the Board of Regents of the University for the degree of Graduate in Pharmacy. In case the candidate has not had the full term of four years' practical experience, his diploma is retained by the Dean until he has completed the time conforming with the requirements of the College.

San Francisco as an Educational Center.—San Francisco as an educational center, has few superiors in the United States. In addition to its excellent Grammar and High Schools, Seminaries and Academies, it has many institutions for imparting knowledge in various directions. Besides several large libraries, supported by subscription, it has a most excellent Free Library, which is used by all classes of citizens. There are also manufacturing establishments, such as glass works, sugar refineries, chemical and other factories, the visiting of which, accompanied by the professors, is a feature in the College instruction. The University of California is near by, where there is a very costly and efficient chemical laboratory, presided over by Professor W. B. Rising and able assistants. Instruction in this laboratory is free, and embraces a wide range of synthetical, analytical and physiological chemistry.

The Climatic Conditions in San Francisco are pre-eminently favorable to study and work. At no time of the year is there either excessive heat or cold, nor is the temperature so uniformly warm as to be enervating. On the contrary, the bracing, stimulating atmosphere of the day and the cool nights tend to keep both body and mind in the highest degree of

activity. To most healthy persons work or exercise of some kind under these conditions is a pleasure, and to active minds study is not wearisome, but satisfying.

REQUIREMENTS FOR ADMISSION.

1. Applicants for admission must be at least eighteen years of age, except in case of graduates of High Schools of this State, or of "Accredited Schools," or of Normal Schools of this State, or of other institutions of a grade equal to the above. All such applicants are admitted irrespective of their age. (While it is advisable that students shall have had one or two years practical training in a drug-store before entering the college, this is not compulsory.)

2. Applicants will be accepted who bring any of the following credentials:
 a. Certificates of graduation from High Schools of this State.
 b. Diplomas of graduation from schools or academies accredited by the State University. (See Register of the University of California.)
 c. Certificates of high standing in other institutions of the collegiate grade.
 d. Diplomas from Normal Schools of this State.
 e. First grade teachers' certificates of this State.
 f. Certificates of having completed satisfactorily the first year's course in High Schools of this State.

3. Applicants who do not present any of the foregoing credentials will be examined in the following branches:
 a. English—They will be required to show their ability in spelling, punctuating, use of capitals, grammatical construction and correctness of expression. (The handwriting will be estimated and form a part of this examination.)
 b. Geography—American and general.
 c. Freehand drawing.
 d. *Arithmetic:* Fundamental rules; fractions, common and decimal; denominate numbers; percentage; proportion.
 e. *Algebra:* Fundamental rules; fractions; equations of the first degree, consisting of two or more unknown quantities.
 f. Latin—Rudiments; declensions of nouns, pronouns, adjectives; conjugation of verbs; translation of simple sentences from Latin to English, and English to Latin.

An applicant who fails to pass the entrance examination may be conditioned in not more than two subjects, in which he will be re-examined after three months. Should he again fail, his fees will be refunded, except that the sum of twenty-five dollars will be retained, which will be placed to his credit if he should return to the college and pay the balance of his fees within two years.

NOTE—It is more than likely that the requirements for the year 1898-9 will be raised so to cover the studies of the second year of the High Schools of this State. Persons who are intending to enter the college then or after that date should use the intervening time in fitting themselves to meet these requirements.

MATRICULATION.

Applicants who desire admission without examination are required to present their credentials to the Dean at the College on or before

Saturday, October 30th, at 9 A. M.,

when those whose credentials are sufficient will be matriculated. All others will present themselves for examination at the College on

Monday, November 1st, at 9 A. M.

PHYSICS.

Lectures and Demonstrations by

PROFESSOR W. T. WENZELL.

Junior Course:

This course begins with an introduction to the knowledge of the various units essential to the physical sciences, then passing on to the general properties of matter and to the forces to which matter in its various states is subject.

Heat is next considered in its various modifications, both theoretically and experimentally, with reference in particular to pharmaceutical uses.

Light is dwelt upon in its varying phases, as revealed in the phenomena of refraction, polarization, fluorescence, phosphorescence, photometry, etc.

Electricity — galvanic and frictional — on account of its importance, receives its due share of consideration, as exemplified in magnetism, induction, electrolysis, etc.

The course concludes with an exposition of the molecular or kinetic forces as exhibited in the domain of the higher branches of physics, followed by an outline of Crystallography.

CHEMISTRY.

Lectures and Demonstrations by

PROFESSOR W. T. WENZELL.

Junior Course:

The introductory lectures for the Junior Class present the atom and the molecule from a chemical standpoint, succinctly followed by an exposition of the elements in relation to their atomic weight, symbols, notation, the law of the valencies of atoms, the laws of chemical combination, all of which are fully explained and illustrated, and typical and other important chemical reactions receive their due share of attention.

Particular instruction is given in the all-important branch of stoichiometrical calculations.

The chemistry of the most important metals and metalloids is then fully presented, giving their history, properties, compounds, preparations, and the tests for their identity and purity.

These lectures being intended for pharmacal students, the topics presented are of a nature to intimately connect them with the profession.

Senior Course:

This course will consist of a series of fifty-six lectures, embracing a systematic treatment of the chemistry of the organic compounds, commencing with the saturated and unsaturated hydro-carbons, their classification and isomerism, illustrating their constitution by means of rational and graphic formulas and a description of their physical and chemical properties, to be followed by their derivatives as exemplified in the alcohols, aldehyds, ketones and their corresponding acids.

The monovalent alcohols and those of higher valencies will be particularly dwelt upon, regarding their isomeries and the products of their oxidation, together with the most important organic acids interesting to pharmacists, their natural source and artificial preparation. The subject of amine bases and ammonium bases, the alkaloids and their constitution, and the glucosides, their constitution, properties and preparation, will be fully commented upon. The remainder of the course will be devoted to the so-called aromatic series, or benzene derivatives which frequently occur naturally in many organic drugs or are obtained by various physical and chemical processes from proximate principles residing therein. The synthesis of many of these will also be presented and formulated. Amongst this category is also to be given the constitution and preparation of aniline dyes, the terpenes, camphors and other benzene derivatives.

CHEMICAL LABORATORY—EXPERIMENTAL.

PROFESSOR FRANK T. GREEN, Director.

Junior Course:

This laboratory is furnished with desks and appliances of modern pattern. Each desk contains drawers and lockers, water, gas, and drainage, besides being furnished with reagents, and necessary apparatus for a systematic course in elementary experimental chemistry, the behavior of the bases and acids, and qualitative chemical analysis. The junior course embraces the study of chemistry from actual experiment; for a student learns something to hear how a thing should be done; more, to see how it should be done; but most, to do it himself, under the guidance of a teacher, and with the conveniences of a laboratory.

Believing in the laboratory method of teaching, the Directors have striven to have the courses complete and practical. The junior (1st session) begins with the plainest example of chemical action, then follow the analysis and synthesis of simple things. The chemistry of the gases, where the student separates or combines oxygen, hydrogen, nitrogen, chlorine, etc., is taken up. Then the non-metals are considered, and their properties investigated by each student.

The chemistry of the metals completes the first session of the junior year, Remsen's Inorganic Chemistry Advanced Course, being the text book. The student's time during the chemical laboratory — experimental — second session, is taken up by investigating the properties of the metals, as shown by reagents; and with the behavior of the acids from the first steps leading to the study of analytical chemistry.

Qualitative chemical analysis completes the term, the text book being A. H. Elliot's Qualitative Analysis. In adopting such a wide range of study, it will be the aim of those in charge to have typical processes of precipitation, neutralization, crystallization and analysis carefully and correctly performed, rather than cram the student with hurried work.

CHEMICAL LABORATORY—ANALYTICAL AND SYNTHETICAL.

PROFESSOR FRANK T. GREEN, Director.

Senior Course:

THE ANALYTICAL work in the first session embraces a systematic course of quantitative chemical analysis, volumetric,

gravimetric and colorimetric. This is a necessity in the education of a practical pharmacist and the course is shaped to this end. It begins with quantitative (gravimetric), chemical analysis and manipulation, the reference book being "Quantitative Chemical Analysis," by Clowes & Coleman. Assays and tests of U. S. P. preparations follow, which include the alkaloidal assay of opium and its preparations, nux vomica and its preparations, cinchona barks and preparations, volumetric analysis and its application to practical pharmacy; also spectrum analysis, water analysis, sanitary, technical and mineral, together with colorimetric, completes the first Senior session, the text book being "Schimpf's Volumetric Analysis."

The second session begins with urinalysis and follows it in all its practical details, a feature of chemical work which is deemed of great importance to the student of pharmacy, and particularly valuable to those who intend to ultimately pursue the study of medicine.

The polaristrobometer is employed in estimating diabetic sugar and albumen, also in determining the optical rotation of the essential oils. The absorption bands of coloring matters of urine are demonstrated by means of the spectroscope, also chlorophyll and blood. Along with these physical tests the methods for the determination of melting points are studied, with examples such as melting point of petrolatum, cacao butter, lard, the waxes, salol, naphthalene, and acetainlid.

Toxicology is dwelt upon, also the polarization of sugar and albumen; milk analysis according to the methods of the city Board of Health and the search for food adulterants complete the course, the text book being "The Milk, the Urine and the Common Poisons," by Holland.

In the back of the U. S. Pharmacopœia there are several pages devoted to tables of gravities, correction of temperatures, tests and volumetric solutions, formulæ and data, a great deal of which to the uneducated pharmacist will be neither valued nor comprehended.

The Analytical Course is made a part of the curriculum of the College, for the special purpose of fitting pharmacists for the work of testing all U. S. P. chemicals for purity or adulterations; for the estimation of either acids or bases in a salt or solution; for determining, also correcting, the gravities of liquids; and so he will not only comprehend, but will be able to utilize the directions, standard tests and tables of the United States Pharmacopœia in their chemical significance. Year by year volumetric methods are establishing themselves in all practical laboratories and factories, and for a check in pharmaceutical manufacturing are invaluable for their speed and accuracy.

The Synthetical course embraces the principles of the manufacture of many organic and inorganic bodies, also their physical and chemical examination.

The synthetic preparation of organic compounds is claiming the attention of chemical laboratories the world over. It is the intention of the Director of the Chemical Laboratory to introduce such typical processes as will lay the foundation for organic laboratory work in the technical training of a pharmaceutical chemist.

Such work is exemplified in the preparation of Iodoform, Formic Acid, Acetic Acid, Saponification, Stearic Acid, Palmitic Acid, Potass. Ferricyande, Potass. Ferrocyanide, Potass. Sulphocyanate, Oxalic Acid, Benzoic Acid, Oil Wintergreen, etc.

The reference book is Laboratory Manual, by W. R. Orndorff.

It will be the aim of those in charge of the laboratory to fit these students for the work the world expects of them. Little will be asked of the memory, but the utmost of the understanding, thus avoiding a cramming system, and giving facilities with instruction for advanced work that cannot be gained in either a retail pharmacy or lecture hall.

This course requires fifty-six sessions of three hours each, from 1:30 to 4:30 P. M.

THEORY AND PRACTICE OF PHARMACY.

Professor W. M. Searby.

Junior Course:

Theoretical Pharmacy is taught by lectures explanatory of the operations and processes employed in laboratory work, while Operative Pharmacy is taught by the only true method of acquiring an art, viz., by having the student perform the operations himself under competent supervision. Hence, for the most part, a lecture of from thirty to sixty minutes precedes each laboratory session, followed, as far as practicable, by work in the laboratory designed to make the student practically conversant with the matters theoretically set forth in the lecture preceding the day's work. What the student does with his own hands, with an intelligent understanding of what he is about, he cannot forget even if he tries; while he often finds out, to his sorrow, that what he is simply told by another he cannot remember, though he try equally hard. By teaching theoretical and practical pharmacy simultaneously, as far as possible, both are better understood and their study made more interesting.

Beginning with a notice of the pharmacopœias of western nations, the various systems of weights and measures in use

by them and the apparatus employed for weighing and measuring, the student passes on to the subject of specific gravity and the methods of estimating the same. Then follows the application of heat to pharmacy, by stoves, furnaces, heaters, etc., water-baths, sand-baths, oil-baths and steam pipes; the measurement of heat by different thermometers and their relation to each other. Then follow the simpler operations of pharmacy, solution, evaporation, distillation, sublimation, precipitation, crystallization, etc.

Comminution is then explained—slicing, bruising, grinding and pulverizing, in mills, in mortars, and by other means; also sifting, elutriation, filtration, clarification and decoloration.

Next to receive attention are maceration, infusion, decoction, digestion, percolation or displacement, repercolation, expression, etc. Then the official waters, syrups, infusions, decoctions, solutions, tinctures, mixtures, emulsions, liquors, etc.

Senior Course:

The Senior course is of a more advanced character than the Junior, and includes the manufacture of chemical syrups, solid and fluid extracts, ointments, cerates, soaps, "chartæ," suppositories, pills, tablets, triturates, troches, effervescing granular salts, scale salts, resins, glucosides, etc.

As occasion requires during this work the processes of percolation, distillation, dialysis, etc., are used and operated by the students, and every detail of each process is explained by the professor. The menstrua employed in galenical preparations being dependent upon the chemical constituents contained in the drugs operated upon, this course forms a complement to that on Organic Materia Medica and Pharmacognosy. Inorganic Materia Medica is treated of in the lectures on Pharmacy, so that every official drug and every preparation in the pharmacopœia is considered, and the student is instructed in the nature, preparations and uses of all the official drugs and medicines.

PRESCRIPTION WORK.

About one-fourth of the Senior course is devoted to dispensing prescriptions, ranging from the simpler to the more difficult formulæ. Each student is required to prepare, label and wrap each package, as if it were to be sent to a patient.

Explanations are given with regard to incompatibles, doses, calculations, and the proper methods to be employed in each case.

Text Books.—U. S. Pharmacopœia, Coblentz's Pharmacy or Remington's Practice of Pharmacy.

Reference Books.—U. S. Dispensatory, National Dispensatory, Caspari's Pharmacy.

BOTANY, MATERIA MEDICA, MICROSCOPY, VEGETABLE HISTOLOGY, AND PHARMACOGNOSY.

PROFESSOR J. J. B. ARGENTI.

Junior Course:

BOTANY.

This course consists of a series of systematic lectures, supplemented by demonstrations with fresh and dried material, and by excursions in the field, where plants are studied under their natural conditions.

The object of the Botanical course is to make the student thoroughly familiar with the morphology of plants, and especially with those parts which supply vegetable drugs employed in medicine. In consequence, more particular attention is devoted to the higher plant forms.

The course is divided into two sections, organography, treating of the organs making up the plant-body, and taxonomy, or systematic botanical classification.

ORGANOGRAPHY.

In this section the plant-organs are considered—root, stem, leaf, flower, fruit and seed, with their forms and modifications.

The terms employed in descriptive botany are explained and comparison made between similar organs of different plants.

Organography gradually leads to the second part of the course.

SYSTEMATIC BOTANICAL CLASSIFICATION.

The several systems of classification are considered and explained. The system followed in this course is that of Bentham and Hooker.

The characters of the more important families are elucidated, especially those families from members of which medicinal drugs are derived.

As classification is comparative in application, the differences existing between nearly-related families are explained, and students are required to differentiate between so related families from specimens provided for dissection, and on the field excursions.

The Golden Gate and other parks being within easy access, afford excellent opportunity for the practical study of Botany.

Text Book in Botany.—Bastin's College Botany.

Reference.—Thome's Structural and Physiological Botany, Gray's Botanical Text Book, vol. 1 ("Structural Botany"), Behr's Flora of Vicinity of San Francisco.

MATERIA MEDICA.

The study of Materia Medica being to a great extent closely related to that of Botany, the parts or organs of plants supplying drugs used and officially recognized are further considered in this department, particular attention being devoted to certain special individual physical characters.

In the consideration of drugs derived from the vegetable kingdom, those of Root, Stem, Leaf, Flower, Fruit, and Seed origin are taken up, then such unclassified parts as Inspissated Juices, Gums, Sugars, etc.

By this method the study of Materia Medica and that of Descriptive Botany are made to be complementary to each other, and thereby the student is enabled to systematize his studies in both branches.

In the latter part of the course attention is devoted to drugs of animal origin.

The lectures include a description of the parts used and officially recognized, their source, collection, physical characteristics, important constituents, uses, official preparations, and doses.

Attention is called to the action of poisonous drugs, and to the remedies or antidotes for overdoses, so that an introduction to dosage and toxicology is obtained.

Each student is supplied previous to the lecture or demonstration with a sample of the drugs to be considered, and as the lecture proceeds is required to make an examination of the same.

Text Books.—Maisch's Organic Materia Medica.

Reference.—United States and National Dispensatories, Culbreth's Materia Medica and Pharmacology.

MICROSCOPY AND VEGETABLE HISTOLOGY.

This course is divided into two sections, Microscopy and Vegetable Histology.

Since it is recognized that a knoweldge of the theory upon which scientific instruments are constructed precedes their use and application, it is necessary that microscopical theory and methods be preliminary to the course in vegetable histology.

After a concise statement of the principles of light and optics, the student is made acquainted with the construction and use of the simple lens, the principles involved in magnification, the correction of lenses, the construction of simple and compound microscopes, with their accessories. The manipulation and care of the instrument is then taught.

As the preparation of material is of utmost importance, the methods of preparing temporary and permanent mounts are dwelt upon, attention being given to fixing, preserving, embedding, sectioning, staining and mounting.

Students are required to perform all processes from commencement to completion of temporary and permanent slides.

Laboratory work being supplemental to the lectures and demonstrations, students are enabled to obtain thereby practice in these manipulations.

Upon the completion of this section, students are advanced to the study of Vegetable Histology.

In this section is included the general and special characters of the vegetable cell and its contents; the epidermal, fundamental and fibrovascular systems of tissues, their physical, chemical and differential characters; the histology and structure of root, stem, leaf, fruit and seed of the higher plant forms.

The course is completed with a comparative study of the histological structural characteristics of the flowerless (Cryptogamous), and flowering (Phanerogamous) plants.

As this course is intended to be practical, Laboratory work is obligatory.

Supplemental material is plentiful, and will be collected fresh on Botanical excursions for laboratory use afterward.

A stereopticon apparatus fitted with micro-projection attachment is used frequently during the term, so that the lectures and demonstrations may be more clear. In this, sections of plant-organs illustrating the various tissues and systems are projected on the screen and explained by the lecturer.

By successive graduated steps progress is made toward the advanced study of vegetable histology, preparatory to its application in Pharmacognosy, so far as concerns the structural and histological characters of drugs derived from plants.

As far as is necessary the class is divided into sections so that each student may obtain all the practice and supervision necessary.

During the term recitations are held at regular intervals. Attendance on these recitations is obligatory; the student is given a rating which forms a portion of his standing at the close of the term. These recitations in no wise conflict with the bi-monthly examinations held, or results of practical laboratory work handed in during the term.

Text Books in Microscopy.—Gage's Microscopical Methods.

Vegetable Histology.—Bastin's College Botany.

Reference.—Bastin's Laboratory Exercises in Botany, Thomas and Dudley's Manual of Plant Histology, Gray's Text Book of Botany, Vol. II, "Goodale's Physiological Botany."

Senior Course:

PHARMACOGNOSY AND MATERIA MEDICA.

Pharmacognosy.

In the Senior course advanced work in Vegetable Histology is continued, especially toward the structural characters of vegetable drugs.

The course includes the gross study of drugs, also minute study of same from sections made in the laboratory; the application of re-agents to determine the lack or excessive amount of histological elements present.

The course is intended to present students with the main facts concerning plants yielding drug remedies, the source, botanical description of plant, habitat, history, collection, preservation, description of the part used, general, physical and structural. When several drugs have a similar appearance, attention is called to the differential characteristics of each.

The varieties of drugs are noted and differences between them explained.

Official drugs, crude, entire and in powder, receive attention. Type slides with mounted specimens are supplied to students for studying the structure of each.

Substitutes, adulterants, etc., are considered with each drug as taken up, so that when compared they may be readily discerned.

The examination of powdered drugs is dwelt upon. Under its proper head the drug is demonstrated from a standpoint of purity. Then is taken up the various substitutes and adulterations liable to be found admixed with it when in this condition.

The object of this is to furnish or supply information whereby these may be detected.

It presupposes a knowledge of the crude drug, its general histology, etc., also a comparative knowledge of the same of higher plants.

Laboratory work, comprising the preparation of mounted specimens and papers upon the drugs or subjects submitted to students for investigation during the term, is compulsory.

This work includes use of simple and compound microscope, detection of substitutes or adulterants, drawing of sections, etc.

Special attention is devoted to official drugs; other important non-official drugs are also considered.

The projection apparatus is employed frequently, stained and unstained sections being thrown directly upon the screen.

Materia Medica.

During the Junior course the student having become acquainted with the botanical descriptive terms and the general characters of drugs derived from plants, it is the object of the Senior course to continue and further advance his knowledge in this department In order that botanical study may be continued and its importance appreciated, the drugs considered in this course are arranged according to their botanical relationship.

The families or orders which include plants yielding drugs are each considered and their general and special differential characters explained. Each official drug and other important non-official drugs, are then considered in detail. As Pharmacognosy includes the source, description, characters, etc., of the drug, but little attention is paid to those points here, only the more important descriptive characters being noticed ; but as pharmaceutical manipulations depend on a knowledge of the chemical composition—the constitution—a great portion of the time is devoted to an exhaustive consideration of active chemical constituents. Especially this is so, so far as concerns certain typical, powerful drugs, others of minor importance being considered in a less detailed manner.

The official preparations, medicinal uses, action of official drugs and doses, is given, especially those which in large or excessive doses exert a poisonous action, also the manner of treatment and remedies to employ in urgent cases.

Toward the close of the term time is devoted to the study of the newer synthetical remedies, their chemical composition, properties, uses and doses.

Text Book.—Maisch's Organic Materia Medica.

Reference.—Culbreth's Materia Medica and Pharmacology, U. S. Dispensatory, National Dispensatory, Flukiger & Hanbury's "Pharmacographia," Helbing's Modern Materia Medica.

PHYSIOLOGY.

C. Hadley Carson, M. D., Lecturer.

This course is intended to give the student an outline of the general principles of Physiology, more particularly as pertains to the actions of the various drugs used in medicine.

During the Junior year the lectures from this Chair will include demonstrations of Histology, the elementary principles of Physiology, the Blood, Digestion, Secretion and Excretion, and Respiration.

During the Senior year the time will be devoted to a consideration of the Reproductive system, the Nervous System, and the Physiological Action of the Chief Drugs Used in Medicine.

PHARMACAL JURISPRUDENCE.

H. R. WILEY, A. B., LL. B.

SYLLABUS.

1. *Definition of Terms.*—Law, common law, civil law, general law, statute law—the process of their development. Medical Jurisprudence, Dental Jurisprudence, Pharmacal Jurisprudence. What may be properly included in Pharmacal Jurisprudence. What legal knowledge is essential to the pharmacist.

2. *History of Pharmacal Jurisprudence.*—Discussion of terms "apothecary," "druggist," "pharmacist." Early stages of the profession of pharmacy in England, separation of pharmacists from grocers, early English legislation recognizing the profession, early English decisions, relation between English law and American law, contests along the line between Pharmacy and Medicine.

3. *Legal Limits of Pharmacy.*—Under general law, under statutes of California. "Practice of pharmacy" defined. Diagnosing and prescribing by pharmacist. What constitutes prescribing in the contemplation of law, the civil liability attaching thereto, the penalty provided by statute.

4. *Practicing Pharmacy without a License.*—Right to practice under the general law, right limited by statute to certain classes, liability under general law, penalty provided by statute, duty of Board of Pharmacy as to offenders under the statutes of California, offenders prosecuted by whom, license to practice how obtained, how revoked, proof of right to practice, remedy when license wrongfully withheld.

5. *The Law of Contracts.*—Express contracts, implied contracts, quasi contracts, nature of contract between seller and purchaser of drugs, obligations in the nature of warranties implied on the part of the seller, obligation on the part of the purchaser, means of enforcing these reciprocal obligations.

6. *Nature of Contract Between the Pharmacist and One for Whom Prescription is Prepared.*—Obligations of pharmacist in the nature of warranties, obligations as to skill and care, degree of skill required by the law, degree of care required by the law, when a reasonable degree and when the highest degree.

7. *Malpractice.*—Willful, ignorant, negligent, degrees of negligence. Liability of pharmacist for malpractice.

8. *Malpractice* continued, with instances and analysis of cases and application of legal principles. Liability of manufacturing pharmacist.

9. *The Law of Agency.*—Duties of principal to agent, duties of agent to principal, principal's liability to agent and agent's liability to principal. Liability of principal to others

for act of agent—act done within scope of agent's authority, act done outside scope of agent's authority, liability of agent to persons other than his principal.

10. *Statutory Provisions Regulating the Practice of Pharmacy.*—Necessity for, constitutionality of, their relation to the general law, their territorial limits, distinction between act of Congress and act of State Legislature.

11. Discussion of the several acts of the Legislature of the State of California bearing upon and regulating the practice of Pharmacy.

12. *Duties and Responsibilities of Pharmacist as a Witness.*—Ordinary, expert. Under what condition exempt from jury duty. "Statute of Limitations" as applied to goods sold and services rendered on credit.

13. *Analysis of a Simple Action at Law.*—Pharmacist as plaintiff, pharmacist as defendant, the nature and force of evidence, the burden of proof, defences—civil actions, criminal actions. Nature and force of "contributory negligence" as a defence.

14. The legal status of the prescription as to the several interests of physician, patient and pharmacist. Copies of prescriptions. Discussion of trademarks—origin, nature, use, common law trademarks, statutory trademarks.

15. *Insurance Law.*—Relating to stock of drugs, mixed stock, etc. Effect of provision in policy against keeping certain prohibited articles—articles prohibited by law, articles prohibited by terms of policy. What amounts to a waiver, by an insurance company, of conditions precedent to its policy.

16. Resumé of important principles of Pharmacal Jurisprudence, with some suggestions as to their application.

TEXT BOOKS.

U. S. Pharmacopœia, 1890.
Organic Materia Medica, by J. M. Maisch.
U. S. Dispensatory, by Wood, Remington and Sadtler, or
National Dispensatory, by Stillè and Maisch.
Simon's Chemistry.
Coblentz' Handbook of Pharmacy, or
Remington's Practical Pharmacy.
Bastin's College Botany.
Microscopical Methods, by S. H. Gage.
Remsen's Elementary Chemistry.
The Milk, The Urine and Poisons, by Holland.
A. H. Elliot's Qualitative Analysis.
Schimpf's Volumetric Analysis.
Elements of Physiology, by Starling.

REFERENCE BOOKS.

Culbreth's Materia Medica and Pharmacology.
Helbing's Modern Materia Medica.
Sadtler and Trimble's Medical and Pharmaceutical Chemistry.
Quantitative Analytical Chemistry, by Clowes and Colman.
Caspari's Pharmacy.
Behr's Flora of the Vicinity of San Francisco.
Thomè's Structural and Physiological Botany.
Gray's Botanical Text Book.
Bastin's Laboratory Exercises in Botany.
Thomas' and Dudley's Plant Histology.
Goodale's Physiological Botany.
Orndorff's Laboratory Manual.

In consequence of the delay which has frequently occurred in obtaining Text Books through the usual trade channels, the Alumni Association have arranged to import a full supply for the use of our students. For particulars, as to cost, etc., apply to

J. J. B. Argenti,
301 Third Street.

EXAMINATIONS.

Periodical examinations are held from time to time during the session in each of the subjects taught by the several Professors.

These examinations are rated by the Faculty; and the ratings, as shown by the results thus obtained, constitute factors in determining the fitness of Juniors for promotion to the Senior class or of Seniors who are candidates for graduation.

Attendance upon these examinations is compulsory. Any student unavoidably detained from being present is required to deliver to the Dean a statement in writing of the cause of his detention.

JUNIOR EXAMINATION.

(For Admission to the Senior Class.)

Junior students, whose rating shows satisfactory progress, receive certificates entitling them to admission to the Senior class at any subsequent session of the College within three years.

First-course students from other Colleges of Pharmacy, who desire to enter the Senior Class of this College, are required to produce evidence of their fitness *or to pass an examination.*

SENIOR EXAMINATION.

Students in the Senior Class are examined for the degree of Graduate in Pharmacy at the end of the session, in Organic and Inorganic Chemistry, Pharmacy, Toxicology, Botany, Materia Medica, Physiology, Chemical and Microscopical Characteristics of Drugs, their doses and uses; Microscopy and Vegetable Histology, and the Translation of Prescriptions.

MODIFIED SENIOR EXAMINATION.

A Senior student having attended at least *two full courses*, may, at the end of the Senior course, present himself for examination in a portion, not less than two branches of study, reserving the remainder of his examination until a subsequent year. He must give notice in writing to the Dean, on or before May 1st, of his intention to so divide his examination. If he pass in two or all these branches, the results will be placed to his credit, provided he pass the remainder of his examination within the next two years; and at the close of the following term he may apply to be examined in the remaining branches, and if he thus complete his examination, may be recommended for the degree of Graduate in Pharmacy.

IN BOTH SENIOR AND JUNIOR CLASSES.

Students who take the entire examination at the close of the term, and fail in more than two branches, are required to pass the examination in all branches at the end of the next term.

CERTIFICATES OF PROFICIENCY.

Certificates of Proficiency will be issued to those students who, having elected to take the modified Senior examination, shall have passed satisfactorily in *all of the branches* in which they were examined; also to special students who pass satisfactorily in their special subjects; also to those candidates who pass successfully in all branches, but are debarred from receiving their diplomas by lack of required experience or by being under twenty-one years of age. Certificates of having passed satisfactorily in certain branches will count towards the examination for the degree of Graduate in Pharmacy. No Certificate of Proficiency in Pharmacy will be issued unless the student has satisfactorily passed in all the branches. No Certificate of Proficiency in any subject will be issued unless the applicant shall have attained as high a percentage of credits in such subject as is required in the general average.

These certificates will be issued, when desired, upon the payment of two dollars each.

CONDITIONS OF GRADUATION.

Every person upon whom the degree of Graduate in Pharmacy shall be conferred must fulfill the following conditions:

1. He must be of good moral character.

2. He must have attained the age of 21 years.

3. He must have attended two full courses in each of the departments of this College, or one course (the Senior) in this, after a course in some other recognized College of Pharmacy.

4. He must have had four years' experience in a pharmacy where physicians' prescriptions are compounded. (His time actually spent in this College will be allowed to count as part of this term of four years.)

5. He must present an account of some special work done in the Laboratory in lieu of a thesis, and exhibit some chemical or pharmaceutical product made under the supervision of the Directors of the Laboratories.

6. He must have attended at least three-fourths of the lectures, reviews and laboratory work.

No special examination will be held for candidates for the Degree, but only that at the end of the regular course.

Those who fail to pass satisfactorily will be allowed to present themselves for examination again within two years without further charge.

Candidates are recommended jointly by the Faculty and Examining Board to the Regents of the University, by whom the Degree is conferred.

FEES.

To be paid in advance.

*Entrance Examination, not refunded in any case	$5 00
Junior Course	100 00
Senior Course	100 00
†Chemical Laboratory	25 00
†Pharmaceutical Laboratory	25 00
†Microscopical Laboratory	25 00
Diploma Fee, to be paid but once and not refunded in case of failure	20 00
Certificates of Proficiency, each	2 00

Each student is required to deposit with the Dean the sum of $15 for the Breakage and Damage Fund. Any unexpended portion of this amount will be refunded at the close of the session.

THE FEES must be paid to the Dean by each student, in person, in advance, or not later than thirty days from the opening of the term.

GRADUATES of the College are privileged to attend the lectures at any future time without payment of fees, but are required to pay a fee to cover expenses in any laboratory or laboratories in which they desire to work.

Other students not intending to pursue Pharmacy as their vocation are admitted to any of the courses they may desire to attend by paying $5.00 entrance fee and that of the chair or chairs of instruction which they wish to attend.

*Those who present satisfactory credentials do not pay this fee.

†When taken separately, and not as part of a full course.

RULES.

1. Students on entering must sign the roll, and subscribe to the rules of the College.

2. Fees must be paid at the opening of the session.

3. Students not answering to roll-call 15 minutes late will be marked absent.

4. In order to have his ticket signed by the Professors, attendance at 75 per cent. of all lectures and laboratory sessions is required, unless exempted for sickness, or special cause by the Board of Trustees.

5. Seats and sections in the lecture rooms and laboratory will be assigned to each student, which he must occupy during the session.

6. Each student will be held responsible for any damage or breakage to his seat or section, whether done by himself or others.

7. Any Student found wilfully damaging or wasting the property of the College is liable to expulsion and fine.

8. Any Student who misbehaves in the class-room or elsewhere in the College building, or who refuses to make good any damage to College property, will be subject to immediate dismissal by any member of the Faculty until the matter is investigated by the Board of Directors, who will determine whether his dismissal shall be temporary or permanent.

9. Students will not be allowed to loiter around, or impede the public highway in front of the College entrance.

10. Smoking on the premises is prohibited.

WHOLESALE DRUGGISTS.

Persons in the wholesale drug business may attend the College, and upon complying with all the requirements for gradation, (other than a four year's experience in the retail drug business), may receive a Certificate of Proficiency, signed by the Faculty of the College.

ALUMNI ASSOCIATION.

The Alumni Association of the California College of Pharmacy was organized in 1882, to further the interests of the College and to encourage the fellowship of its members, thus bringing the more recent graduates into a closer acquaintence with the older ones, and making the Association a valuable auxiliary in promoting the work of the College. The annual meeting is held at the close of the term.

BOARD AND LODGING.

Good board and lodging can be obtained in San Francisco for from $15 to $25 per month, and restaurants abound in which good meals can be had from 10 to 40 cents. Single furnished rooms may be had without board, for from $5 to $10 per month.

EMPLOYMENT.

Situations as relief clerks while attending College may be obtained in drug stores, but the remuneration for such services is not great. Yet many of the students prefer to do some work of this kind during the sessions. The Dean of the Faculty will register the names of the students who desire situations, and all the officers of the College will use their influence to find employment for them.

GRADUATING CLASS, 1897.

LUTHER WILLIAM BAHNEY.

IGNATIUS BECK.

ARMAND EUGENE BRIGGS.

WILLIAM HENRY BUTLER.

EARL LELAND CRUM.

HENRY R. COUSINS.

ELIZABETH DUDLEY.

GEORGE LOUIS EDELMANN.

CLARENCE ELLIOTT FREITAS.

LOUIS MONTROSE HAIGHT, PH. B.

FREDERICK ADOLPH HARTMANN.

JOHN ALOYSIUS HADERLE.

MELVILLE EDWARD LUBOSCH.

WILLIAM MÜLLER.

ALBERT LUTHER MCKAY.

WALTER EUGENE NEBLETT.

GEORGE PHILIP PURLENKY.

PETER ROCK.

STUDENTS—CLASS OF 1897.

Seniors.

Name.	Residence.
Angell, Harry Millington	San Francisco
Bahney, Luther William	San Francisco
Beck, Ignatius	San Francisco
Bocca, William Aloysius	San Francisco
Briggs, Walter David	Oakland
Butler, William Henry	San Francisco
Carter, Frank Martin	Irvington
Clifford, William James	San Francisco
Cousins, Henry R	Hanford
Crum, Earl Leland	Alameda
Eggert, Frederick Howard	San Francisco
Freitas, Clarence Eliott	Stockton
Gamble, Frank Alexander	Elmira
Haderle, John Aloysius	San Francisco
Haight, Louis Montrose	Stockton
Hardy, Lowell Edwin	Oakland
Hartmann, Frederich Adolph	San Francisco
Lockwood, Frank Edgar	San Rafael
Logie, Thomas Patrick	San Francisco
Lubosch, Melville	San Francisco
McKay, Albert Luther	Tres Pinos
Moore, Harry Chrisley	Lodi
Muller, William	Oakland
Neblett, Walter Eugene	Clarksville, Tenn.
Otto, William H	San Jose
Powell, Clay Hereford	Eureka, Nev.
Purlenky, George Philip	San Francisco
Rock, Peter	Alameda
Ruhser, Frederick William	San Francisco
Seymour, Albert Paul	San Francisco
Siebe, Henry Hermann	Shell Mound Park
Turner, Frederick William	Irvington
Volberg, Frederick Ludwig	Alameda
Withers, George Milton	San Francisco
Witmer, John	Placerville

Juniors.

Name.	Residence.
Agnews, Ellard Albert	Hollister
Armand, Emile Charles	San Francisco
Baumeister, Edward Emery	San Francisco
Baumgarten, Willie	San Francisco
Barnickel, Bernhard	Weaverville
Beerman, Wilfred Fenton	San Francisco
Behrendt, Jacob William	San Francisco
Blackburn, Frederick Abner	San Bernardino
De Blaumford, Nicolaus	San Francisco
Chaigneau, Mrs. Kate Regina	Crescent City
Collins, Willis Harold	San Francisco
Conlin, Arthur Vincent	San Francisco
Conradi, Carl Herbert	Oakland
Decoto, John Robert	Irvington
Doerr, Louis	San Jose
Ehrenberg, Walter d'Artenay	West Oakland
Frazee, Henry De Witt	Santa Rosa
Greenwood, Earl Norman	Vallejo
Haggard, Stella Blodgett	San Francisco
Hakes, Clinton Devillo	San Diego
Hutaff, Gustave Albert	San Francisco
Jacobs, Louis Clive	San Francisco
Keenan, Clair Vernon	Oakland
Lassen, Henry Christopher	Alameda
McDermott, John Thomas	Oakland
McNulty, Charles Raymond	Berkeley
Mervy, Lito Alphonse	Oakland
Mish, Oswald Sim	San Francisco
Ryan, Maurice James	San Francisco
Sanborn, Walter Logan	Los Angeles
Schaefer, Victor Louis	Oakland
Shideler, Andrew Franklin	Medford, Oregon
Shoults, Robert Grafton	Napa
Smith, Ernest Leroy	Visalia
Spiro, Abraham	San Francisco
Sweetser, George William	San Francisco
Triebel, Charles Augustus	San Francisco
Upp, Arthur Frank	San Francisco
Wachs, Harold	Oakland
Webb, Edward Otis, Jr.	San Lorenzo
Williams, George Edward	Hood River, Oregon
Wing, William	Eureka
Zumwalt, Frederick H	San Francisco

GRADUATES.

Name	Residence	Year of Graduation
Abraham, Chas. J	San Francisco	1895
Adair, William H	San Francisco	1881
Atkinson, Frank J	San Francisco	1896
Airaldi, August	San Francisco	1892
Aitken, Louis S	Oakland	1890
Argenti, J. J. B	San Francisco	1881
Ayers, Walter W	U. S. Navy	1893
Bacon, Gaston E	San Francisco	1875
Bagley, Hubert F	San Francisco	1893
Bagot, Edward Albert	San Francisco	1892
Bahney, Luther William	San Francisco	1897
†Baily, Richard J., M. D		1895
Ball, Henry A	Oregon	1884
Ball, Robert L	Oregon	1882
Bandel, Edward F	Pasadena	1894
Barbat, Josephine E	San Francisco	1884
Bare, Edward R. L	San Francisco	1892
Barrington, Charles L	San Francisco	1883
†Bauer, Fred C		1877
Bayly, Jr., Chas. A	San Francisco	1895
Beaizley, George T	San Francisco	1885
Beck, Henry M., M. D	San Francisco	1889
Beck, Ignatius	San Francisco	1897
Beckett, F. Arthur	San Francisco	1883
Becker, Frank C	Merced	1895
Bernheim, Moses Ralph	San Francisco	1891
Besthorn, H. E. D	San Francisco	1884
Bilger, Frank W	Oakland	1889
Blum, Joseph H	San Francisco	1894
Bodkin, Thomas P., M. D	San Francisco	1887
Bond, Frederick T., M. D	San Francisco	1886
Borchers, Adolph W	San Francisco	1889
Boswell, Frank M	Los Angeles	1886
Bowen, Charles P., M. D	New York	1889
Bowerman, Kenneth B	San Francisco	1893
Bowen, Daisy M	San Francisco	1896
Bridgewater, Edgar	Oakland	1896
Briggs, Armand Eugene	Hollister	1897
Bratton, Fred O	San Francisco	1886
Broderick, Daniel J	San Francisco	1894
Brown, Jos. H	San Francisco	1895
Burnett, G. G	San Francisco	1879
Burnett, George W	San Francisco	1893
Bussenius, Adolph G	San Francisco	1888
Butler, William Henry	San Francisco	1897
Calegaris, Joseph	San Francisco	1882
Callender, Ernest G	Los Angeles	1891
Campodonico, Jos. M	San Francisco	1896
Cavagnaro, A. A	San Francisco	1892
Chard, George R	San Francisco	1881
Cherry, Edw. M	San Francisco	1896
Clayes, Wellington I	San Francisco	1896
Chilson, Henry G		1891
Christopher, John F	San Francisco	1895
Cleary, Stephen, M. D	San Francisco	1890
Chapman, Clarence H	Los Gatos	1893

†Deceased.

Name	Residence	Year of Graduation
Cerf, Joseph Leon	San Francisco	1891
Cody, Nelson A	Merced	1881
Cogswell, Frederick	U. S. Navy	1892
Conlin, Francis Jesse	San Francisco	1891
Conlan, F. J	Nevada City	1894
Connolly, Thomas W	San Francisco	1894
Cottle, Harold S	San Jose	1895
Cousins, Henry R	Hanford	1897
Cox, Levitt H	San Francisco	1889
Crew, Henry W	Chico	1887
Crowley, Thomas J	San Francisco	1892
Crowley, John J	San Francisco	1896
Crozier, Orlando P	Tustin, Cal	1896
Crum, Earl Leland	Alameda	1897
Curragh, John M	San Francisco	1887
Cummins, J. W	Oroville	1895
Davis, Thomas H	San Francisco	1891
Davis, William J	Oakland	1885
D'Artenay, Eugene	San Francisco	1882
†Delicat, John F. A		1888
Des Marais, Lafayette N	Oakland	1892
Devine, John	Santa Monica	1877
Dewitt, James M	San Francisco	1881
Dick, William H		1884
Dignan, Michael H	Santa Rosa	1883
Donaldson, John G	Oakland	1891
Donnelly, Francis J	Oakland	1893
Dore, C. W	Berkeley	1895
Dorrance, Ralph G		1885
Dowdall, Richard J	San Francisco	1894
Driscoll, Edward P., M.D	San Francisco	1888
Driscoll, Frederick A	San Francisco	1887
Driscoll, Frank I	San Francisco	1891
Drossel, August A., M.D	San Francisco	1886
Drossel, Joseph H	San Francisco	1893
Dubois, Paul A	San Francisco	1880
Dudley, Elizabeth	Dixon	1897
Dufficy, George W	San Francisco	1893
Duprey, Arthur E	Dixon, Cal	1896
Duncan, Frank T	San Francisco	1895
Edelmann, George Louis	Petaluma	1897
Edwards, William	San Francisco	1892
Elwert, Charles P., M.D	New York	1881
Emde, George H	Lodi	1894
Emerson, Horatio B., M.D	San Francisco	1888
Ferrea, Emilio A	San Francisco	1896
Fairbanks, Chas. D	Santa Ana	1895
Fevrier, J. P	San Francisco	1881
Fitzell, Charles R	Eureka, Cal	1883
Fitzell, Lincoln	Eureka, Cal	1889
Fletcher, David M	San Francisco	1881
Flint, George E		1888
Folkers, Oscar H	San Francisco	1893
Fox, Jay Ernest	Oakland	1892
Fox, Albert S	Placerville	1889
France, William M	San Francisco	1894
Freitas, Clarence Elliott	Stockton	1897
Gardner, Frank A	Washington	1891

†Deceased.

Name	Residence	Year of Graduation
Gates, Emery P.	San Francisco	1887
Gerdes, Henry G	San Francisco	1889
Gibson, Martin R.	San Francisco	1891
Gienger, Charles J.	San Francisco	1892
Gilbride, Philip J.	San Francisco	1891
Green, George A.	San Jose	1893
Green, Franklin T.	San Francisco	1882
Green, John A.	Sacramento	1883
Gove, D. M.	San Francisco	1881
Graham, Thomas D.	San Francisco	1875
Grazer, F. A., M. D.	San Francisco	1880
Grossman, Edward L., M. D.	San Francisco	1891
Gydison, Carl T. L.	Salinas	1895
Haber, William J.	San Francisco	1896
Haderle, John Aloysius	San Francisco	1897
Hahman, Paul T.	Santa Rosa	1885
Haight, Louis Montrose	Stockton	1897
Hall, Benjamin F.	Palo Alto	1889
Haman, Henry	San Francisco	1887
Hammitt, Charles H.	San Francisco	1881
Hance, Bowen Forrest	Los Angeles.	1891
Hanlon, Edw R.	San Francisco	1896
Hanson, Geo. F., M. D.	San Francisco	1892
Happersberger, Emil	San Francisco	1882
†Harris, Henry R.		1876
Harris, Louis	Fresno	1891
Hartmann, Frederick Adolph	San Francisco	1897
Harvey, George J.	San Francisco	1889
Hawkes, Robert H.	Oakland	1892
Hawkins, Geo. W., M. D.	San Francisco	1895
Hazen, Edward A	Agnews	1894
†Heaney, J. P.		1874
Hedrick, Walter M.	San Francisco	1893
Heider, Frank B.	Oakland	1889
Heinzeman, Edward A.	Los Angeles.	1892
Helke, W. L.	Sacramento	1878
Henderson, David L.	Sutter Creek	1888
Higby, Edward P.	Oakland	1894
Higgins, Charles C.	San Francisco	1888
Hirst, Charles P.	Berkeley	1893
Hoover, Ulysses G.	San Francisco	1890
Hopkins, Vincent W.	Stockton	1896
Houghton, T. B.	San Francisco	1896
Hueter, Gustave A.	San Francisco	1890
Hughes, Samuel F	San Francisco	1886
†Hughes, Thomas H., M. D.		1886
Hulting, F. B.	San Francisco	1880
Hund, George B.	San Francisco	1892
Hurtzig, W. F. N.	San Francisco	1881
Inman, Thos. G.	San Francisco	1892
Ing, John C. Jr.	Sacramento	1887
Inman, Pratt C.	San Rafael	1895
Jackson, William J.	Oakland	1896
Janeck, Frederick L.		1892
Johns, Thomas Edwin.	Los Gatos	1892
†Jones, Morgan L.		1883
Joy, Edwin W.	San Francisco	1878
Johnson, William P.	Los Gatos	1863

†Deceased.

Name	Residence	Year of Graduation
Jones, Adial S	Placerville	1895
Judson, Russell H.	San Francisco	1882
Kahn, Adolph J., M. D.	Napa	1875
Keefe, John J	San Francisco	1890
Kelsey, Harry D	Berkeley	1888
Kelsey, John Edson, M. D.	Arroyo Grande	1891
Kelton, Julian V.	Ukiah	1894
Kellogg, Wilfred H., M. D.	Palo Alto	1892
Kidd, Albert J	St. Louis, Mo.	1894
Kiely, Eugene A	San Francisco	1896
King, William H. V.	Redwood City	1891
Korper, Harry W	San Francisco	1883
Krause, Frederick L	Oakland	1884
Ladd, Henry	San Francisco	1891
†Lann, William Henry		1892
Laubersheimer, Geo. A	Wilmington	1896
Leber, Albert L.	Oakland	1884
Leet, Robert Andrew	Oakland	1891
Legge, Robert T.	San Francisco	1891
Leithold, John V	Woodland	1890
Lengfeld, Felix	Chicago	1880
Lengfeld, Jos. L	San Francisco	1895
Levison, Charles G., M. D.	San Francisco	1884
Leszynsky, Samuel	San Francisco	1880
La Rue, D. Duke	Stockton	1894
Lichtenstein, Max	San Francisco	1894
Lichthardt, G. H. P.	Sacramento	1896
Lindsay, Frederick G	San Francisco	1883
Link, Victor A	Mexico	1890
Lovotti, Frederico	San Francisco	1891
Lucchetti, Victor F	San Francisco	1894
Loehr, George W	San Francisco	1884
Logan, M. H., M. D.	San Francisco	1887
Lubosch, Melville Edward	San Francisco	1897
Lustig, Daniel David, M. D.	San Francisco	1888
Maloney, James J	San Francisco	1888
Mardis, Benjamin A., M. D.		1890
Mathewson, J. McL.		1879
Mayer, Oscar J., M. D.	San Francisco	1885
McCarthy, James H.	San Francisco	1881
McDonnell, S. A.	San Francisco	1878
McKay, Albert Luther	Tres Pinos, Cal	1897
McKenny, William B.	Olympia, Wash	1893
McKenny, Samuel M.	Olympia, Wash	1893
McLaughlin, W. H., M. D.	San Francisco	1878
†McLean, F. P.		1875
McMurdo, John R., M. D.	San Francisco	1887
†McNamara, John A		1893
McQueen, H. M.	San Francisco	1895
Medros, Joseph J., M. D.	Oakland	1890
Mendel, Louis Carl	Antioch	1893
Mervy, Emil C., M. D.	San Francisco	1879
Messing, L. J.	Fresno	1879
Meyer, August W	Honolulu	1885
Meyers, Robert C., M. D.	San Francisco	1875
†Minor, George W		1879
Minstrell, Geo. W.	San Francisco	1896
Miller, H. L.	Jacksonville, Or.	1895

†Deceased.

Name	Residence	Year of Graduation
Mohun, Charles C., M. D.	San Francisco	1885
Molony, Edward J.	Stockton	1887
Moore, Berkeley W.	Stockton	1883
†Moore, C. C.		1878
Moore, Royal T.	Stockton	1896
Morgan, Charles L., M. D.	San Francisco	1886
Morgan, Henry F., M. D.	New York	1889
Morrison, W. P.	San Francisco	1880
Muller, William	Oakland	1897
Munson, James G.	San Jose	1884
Munter, Leo.	Oakland	1895
†Murphy, Martin J.		1881
Nash, Bert	San Francisco	1894
Neblett, Walter Eugene	Clarksville, Tenn.	1897
Newman, Felix H.	Monterey	1891
Newby, Thomas S.	Ventura	1884
Newton, John C.	San Francisco	1895
Nicholls, Horace S.	Healdsburg	1887
Nightingale, Joseph B.	San Francisco	1892
Noe, George T.	Auburn	1896
Oberdeener, George	Stockton	1884
Oberdeener, Samuel	Santa Clara	1880
O'Grady, James J.	U. S. Navy	1891
O'Neil, Ambrose E.	San Francisco	1889
Olds, George L.	San Francisco	1891
Onesti, S. J.	San Francisco	1895
Orena, Arthur G.	Los Angeles	1887
Painter, George L., M.D.	San Francisco	1892
Parker, E. S.	Sacramento	1878
Parker, Scollay, M.D.	San Francisco	1893
Patton, Wm J.		1885
Parr, Marian Ada	Sebastopol	1896
Patterson, Frank F.	San Francisco	1891
Peck, Samuel S., B. S.	San Francisco	1892
Perkins, Philip J.	San Francisco	1887
Perrone, Darius L.	San Francisco	1896
Petrie, Frank B., M.D.	San Francisco	1888
Pooler, Chester B.	Santa Rosa	1892
Polk, Charles W.	Watsonville	1892
†Potter, Grace M.		1892
Potter, Frank L.	Oakland	1894
Powell, W. C.	San Francisco	1895
Preuss, John.	Marshfield, Or.	1892
Prien, Harry F.	San Francisco	1885
Prosser, Sanford S.	Philadelphia	1891
Puck, Richard F.	Crescent City	1894
Purlenky, George Philip.	San Francisco	1897
Ralston, Frank W.		1888
Ray, Fred E.	Sacramento	1876
Rees, David R.	Livermore	1892
Reilly, Eugene C.	Oakland	1885
Reilly, Paul H.	Oakland	1883
Reynolds, Helen G.	San Francisco	1896
Rimpau, Frank T.	Santa Barbara	1883
Roche, Thomas B.	San Francisco	1892
Rock, Peter.	Alameda	1897
Rogers, Nathan, M.D.	San Francisco	1876
Root, George A.	San Francisco	1888

†Deceased.

Name	Residence	Year of Graduation
Ross, George I.	Stockton	1893
Roturier, Emil.		1883
Rowe, Frederick W.	Oakland	1890
Rubel, Chas. C.	Marysville	1895
Ryan, Peter A.	Redwood City	1892
Samuels, Edward H., M.D.	San Francisco	1891
Sanborn, William M., M.D.	Oakland	1888
Scamell, Joseph W., M.D.	San Francisco	1893
Scherb, Louis Henry.	Port Grant, Ariz.	1893
Schmelz, Charles J., M.D.	San Francisco	1885
Schmidt, Edwin V.	San Francisco	1890
†Schneider, Henry R.		1891
Scholl, A. L., M.D.	San Francisco	1881
Scholl, Otto.	San Francisco	1896
Schwartz, Harry.	San Francisco	1891
Siefert, Charles A.	Oakland	1887
Selzer, Edward, M. D.	Oakland	1877
Sharp, Sol. A.	San Francisco	1892
Shaw, Herbert G.	San Francisco	1894
Shumate, Thomas E., M. D.	San Francisco	1890
Simmons, Haydn M.	San Francisco	1895
Skilling, Harry H.	Oakland	1885
Skinner, Edwin E.	Eureka, Cal.	1886
Skinner, John Bryant	San Francisco	1892
Skinner, Robert W.	Eureka, Cal.	1883
Smith, Arthur H.	San Francisco	1879
Smith, Kirby B.	Lorin, Cal.	1890
Summer, Adolph	New York	1879
Spiro, Harry	San Francisco	1893
Squires, Harry J.	Berkeley	1890
Stange, Carl F.	U. S. Navy	1894
Stock, William S., B. A.	Poatland, Oregon	1892
Stone, Bertha I.	San Francisco	1894
†Thevenet, Ernest J.		1888
Topley, James H.	Vallejo	1885
Topley, William H.	Vallejo	1888
Tobriner, Ike	Oakland	1893
Trask, Henry C., M. D.	San Francisco	1890
Trautz, Otto George	Benicia	1891
Troppmann, Charles M.	San Francisco	1881
Tryon, James W.	Sacramento	1882
Turner, Guy S.	Modesto	1885
Upp, William A.	San Francisco	1893
Ullman, Fred G.	San Francisco	1895
de Urunuela, N. R.	Acapulco, Mexico	1895
Van Werthern, Joseph, M. D.	San Francisco	1889
Villain, Albert John, M. D.	San Francisco	1892
Volkmann, Martin F.		1891
Vogel, Rudolph Fred	Los Angeles	1893
von der Leith, Harold	San Francisco	1893
†Vreeland, Ph. L.		1879
Ware, John Hiram	Portland, Or	1891
Wagner, Allen C.	San Jose	1889
Wall, Henry A.	Olympia, Wash.	1883
Waller, Julian L.	San Francisco	1880
Waller, Samuel Leroy	San Francisco	1893
Walsh, Andrew D.	Redwood City	1884
Warren, Joseph S.	San Francisco	1887

†Deceased.

Name	Residence	Year of Graduation
Wechsler, Paul	Germany	1892
Wegener, Edward L	San Francisco	1896
Weihe, Otto A	San Francisco	1889
Weiss, Philip	San Francisco	1878
Westlake, Leonard J.	Nevada	1891
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Whitney, William B	Healdsburg	1884
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Wight, David	Oakland	1888
Wollenberg, Charles M	San Francisco	1894
Worth, Thomas	San Francisco	1891
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Abraham, Chas. J.	1895	1144 McAllister St., S. F.
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Atkinson, F. J.	1896	1516 Mission St., S. F.
Airaldi, August	1892	Broadway & Montgomery Ave.
Bacon, Gaston E.	1875	2695 Sacramento St., S. F.
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Bahney, Luther	1897	400 Sutter St., S. F.
Bandel, Edward F.	1894	Pasadena, Cal.
Barbat, J. Henry, M. D.	1880	803 Sutter St., S. F.
Barbat, Josie E.	1884	3700 California St., S. F.
Bayly, Chas. A., Jr.	1895	Grant Ave. and Sutter St., S. F.
Beaizeley. Geo. T.	1885	3 Montgomery St., S. F.
Beckett, F. A.	1883	220 Sutter St., S. F.
Beck, H. M., M.D.	1889	32 O'Farrell St., S. F.
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Bilger, Frank W.	1889	Oakland, Cal.
Blum, Jos. H.	1894	1421 Geary St., S. F.
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Boswell. Frank M.	1887	Los Angeles, Cal.
Bowerman, K. B.	1893	Sutter and Polk Sts., S. F.
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Cavagnaro, August A.	1892	1011 Jackson St., S. F.
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Cherry, E. M.	1896	134 Pine St., S. F.
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Conlan, Francis J.	1894	Nevada City, Cal.
Connolly, Thomas W.	1894	Mare Island
Cogswell, Fred L.	1892	U. S. N., Mare Island
Cousins, H. R.	1897	Hanford, Cal.
Cox, Levitt H.	1889	Polyclinic, 406 Ellis St., S. F.
Crozier, O. P.	1896	Sansome and Clay St., S. F.
Crowley, Thos. J.	1892	Harrison and 7th Sts., S. F.
Crowly. John J.	1896	646 Valencia St., S. F.
D'Artenay, Eugene	1882	Cor. 24th & Potrero Ave., S. F.
Devine, John	1879	Santa Monica, Cal.
Des Marais, L. N.	1892	1154 E. 14th St., Oakland
Donaldson, John G.	1891	1801 San Pablo Ave., Oakland
Dore, C. W.	1895	1362 Park St, Alameda
Dowdall, Richard J.	1894	Valencia and 19th Sts., S. F.
Drossel, Aug. A., M. D.	1886	Cor. Powell & Jackson Sts., S.F.
Driscoll, Fred A.	1888	Cor. 10th & Folsom Sts., S. F.
Dudley, Elizabeth	1897	Dixon, Cal.
Dufficy, Geo. W.	1893	St. Mary's Hospital, S. F.
Duncan, F. T.	1895	558 Folsom St., S. F.
Duprey, A. E.	1896	Napa, Cal.
Edwards, Wm., M. D.	1892	119 Powell, S. F.
Emde, George H.	1894	Lodi, Cal.
Fairbanks, Chas. D.	1895	Santa Ana, Cal.

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Folkers, O. H	1893	423 Golden Gate Ave., S. F.
Fox, Jay E	1892	1366 9th St., Oakland
France, William M	1894	2803 16th St., S. F.
Freitas, C. E	1897.	231 Weber Ave., Stockton, Cal.
Gates, Emery P	1887	100 Stockton St., S. F.
Gilbride, P. J	1891	771 Harrison St., S. F.
Gibson, Martin R	1891	San Francisco
Gienger, Chas. J	1892	3 Montgomery St., S. F.
Green, Geo. A	1893	San Jose, Cal.
Green, Franklin T	1882	500 Fell St., S. F.
Grossman, Edward L., M. D	1891	S. F.
Grazer, Fred A., M. D	1880	19th and Mission Sts., S. F.
Gydison, C. T. L	1895	Salinas, Cal.
Haderle, John A	1897	313 Gough St., S. F.
Hall, B. Fred	1889	Palo Alto, Cal.
Hanlon, Edward R	1896	1423 Bush St., S. F.
Harris, Louis	1891	Fresno, Cal.
Haber, W. J	1896	2640 Jackson St., S. F.
Haight, L. M	1897	101 East Main St., Stockton
Harvey, Geo, J	1889	Langley & Michaels Co., S. F.
Happersberger, Emil	1882	6th and Mission Sts., S. F.
Hawkes, Robt. H	1892	33 Grant Ave., S. F.
Hazen, Edward A	1894	Agnews, Cal.
Heinzeman, Edw. A	1895	Los Angeles, Cal.
Hedrick, W. M	1893	513 Taylor St., S. F.
Higby, E. Payson	1894	482 Plymouth Ave., Oakland
Hirst, Charles P	1893	Berkeley, Cal.
Higgins, Chas. C	1888	San Francisco
Hopkins, V. W	1896	Stockton, Cal.
Hoover, Ulysses G	1890	Cal. & Devisadero Sts., S. F.
Hund, Geo. B	1892	622 Broderick St., S. F.
Heuter, Gus. A	1890	Cor. 24th & Howard Sts., S. F.
Jackson, Wm. J	1896	1173 Market St., Oakland, Cal.
Jones, A. S	1895	Placerville, Cal.
Johnson, W. P	1893	Los Gatos, Cal.
Johns, T. Edwin	1892	Los Gatos, Cal.
Kellogg, Wilfred H	1892	1149 14th St., Oakland, Cal.
Kelsey, Harry D	1888	Berkeley, Cal.
Kelsey, J. Edson	1891	Arroyo Grande, Cal.
Kelton, Julian O	1894	Ukiah, Cal.
Kidd, A. J	1894	San Francisco
King, W. H. V	1891	Redwood City, Cal,
Kiely, E. A	1896	265 Octavia St.. S. F.
Ladd, Henry	1891	Cor. 4th and Howard Sts., S. F.
LaRue, D. Duke	1894	St. Helena, Cal.
Legge, Robt. A	1891	5 Harry Place
Lengfeld, J. L	1865	202 Stockton St., S. F.
Leet, Robt. A	1890	514 13th St., Oakland, Cal.
Leithold, John V	1890	Woodland, Cal.
Lovotti, Fred	1891	1400 Dupont St., S. F.
Link, Victor	1890	S. F.
Lichtenstein, Max	1894	610 Oak St., S. F.
Lichthardt, Geo. Jr	1896	Sacramento, Cal.
Levison, Chas. G., M. D	1894	2409 Washington St., S. F.
Lucchetti, Victor F	1894	934 Broadway, S. F.
Lubosch, M. E	1897	731 O'Farrell, S. F.
McKay, A. L	1897	Milpitas, Cal.
Meyers, August W	1885	Honolulu, H. I.
Mardis, Benj. A., M. D	1890	St. Luke's Hospital, S. F.

Name	Class	Address
Medros, Joseph J., M. D.	1890	1728 8th St., Oakland, Cal.
Mendel, L. C.	1893	Antioch, Cal.
McCarthy, James H.	1888	202 Stockton St., S. F.
McQueen, H. M.	1895	Market & 14th St., Oakland, Cal.
Miller, H. L.	1895	Jacksonville, Oregon
Minstrell, G. W.	1896	California and Hyde, S. F.
Moore, R. T.	1896	Stockton, Cal.
Nash, Bert	1894	Sutter and Devisadero St., S.F.
Newman, Felix H.	1891	Monterey, Cal.
Newton, John C.	1895	1198 Treat Ave., S. F.
Nichols, Horace S.	1887	Healdsburg, Cal.
Nightingale, Joseph B.	1892	San Francisco
Noe, G. T.	1896	Auburn, Cal.
Oberdeener, Samuel	1880	Santa Clara, Cal.
O'Grady, James J.	1891	U. S. N. Mare Island
O'Neil, Ambrose E.	1889	608 17th St., S. F.
Olds, George L.	1891	No Percentage Pharmacy, S.F.
Onesti, S. J.	1895	2227 Jones St., S. F.
Patterson, Frank F.	1891	Paso Robles, Cal.
Peck, Samuel S., B. S.	1892	Mexico
Perrone, Darius L.	1896	634½ Broadway, S. F.
Perkins, Philip J.	1888	33 Grant Ave., S. F.
Potter, Frank L.	1894	Park St. & Encinal Ave. Alameda
Preuss, John	1892	Marshfield, Oregon
Polk, Chas. W.	1892	Watsonville, Cal.
Ray, Fred E.	1876	Sacramento, Cal.
Rees, David R.	1892	Livermore, Cal.
Roche, Thos. B.	1892	16 Pearl st., student Toland Col.
Rock, Peter	1897	Alameda, Cal.
Ross, George I.	1893	Stockton, Cal.
Rowe, F. W	1890	San Lorenzo, Cal.
Rubel. C. C.	1895	Marysville, Cal.
Ryan, Peter A	1892	Redwood, Cal.
Sanborn, Wm. K., M. D.	1888	1369 8th St., Oakland
Samuels, Edw. H., M. D.	1891	6th and Howard, S. F., (Roots)
Schumate, Thos. E., M. D.	1890	Sutter & Devisadero Sts., S. F.
Schmidt, Edwin V.	1890	1845 Polk St, S. F.
Schwartz, Harry	1891	G. Leipnitz & Co., S. F.
Scamell, Jos. W., M. D.	1893	Bush and Devisadero Sts., S. F.
Scherb, L. H.	1893	Fort Grant, Arizona
Schmelz, Chas. J., M. D.	1885	1600 Market St., S. F.
Seifert, C. A.	1887	Bowman & Son, Oakland
Sharp, Sol. A.	1892	Cor. Polk & Jackson Sts., S. F.
Shaw, Herbert G.	1894	
Simmons, H. M.	1895	704 Ellis St., S. F.
Stange, Carl F.	1894	U. S. S. Independence, Mare Is.
Stone, Bertha I.	1894	Sutter Creek, Cal.
Tobriner, Ike	1893	1113 Jefferson St., Oakland
*Thevenet, Ernest J.	1888	
Topley, James H.	1885	Vallejo, Cal.
Trask, Harry C., M. D.	1890	Cor. Post & Buchanan Sts., S.F.
Trautz, Otto G.	1891	Benicia, Cal.
Upp, William A.	1893	Sutter and Powell, S. F.
Uruñuela, N. R. de	1895	Costa Rica or Guatemala
Villain, Albert J., M. D.	1892	French Hospital, S. F.
Von der Lieth, H. O.	1893	742 Broadway, S. F.
Volkman, Martin F.	1891	Santa Monica
Walsh, Andrew D.	1884	Redwood City, Cal.

*Deceased.

Name	Class	Address
Wagener, Allen C.	1889	89 N. 1st St., San Jose, Cal.
Warren, Jos. S.	1887	1144 McAllister St., S. F.
Waller, Julian L.	1889	33 Grant Ave., S. F.
Wegener, E. L.	1896	1421 McAllister St., S. F.
Weihe, Otto A.	1889	803 Sutter St., S. F.
Wollenberg, Chas. M.	1894	202 Stockton St., S. F.
Worth, Thomas	1891	Palace Pharmacy, S. F.
White, Thomas	1888	419 Clayton St., S. F.
Whiting, Eugene C.	1893	Berkeley, Cal.
Weiss, Philip	1878	39 Stevenson St., S. F.
Wise, M. S.	1893	301 Third St., S. F.
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H. D. NOBLE, D. D. S., Demonstrator of Operative Dentistry and Orthodontia Technic.

S. P. TUGGLE, M. D., Demonstrator of Anatomy.

S. J. FRASER, A. B , M. D., Assistant Demonstrator of Anatomy.

EDWIN BUNNELL, A. B., M. D., Junior-Assistant Demonstrator of Anatomy.

JAS. G. SHARP, D. D. S., M. D., Assistant to the Chair of Physiology and Histology.

C. P. HAUSELT, D. D. S., Demonstrator of Mechanical Dentistry.

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The Session of 1897–'98 begins Sept. 6th, and ends May 31st, 1898.

In accordance with a rule adopted by the National Association of Dental Faculties, requiring three years' attendance of all matriculates, matriculates who are graduates in Medicine will be admitted to the second year without examination, but will be required to make up the technical work of the Freshman year. Graduates in Pharmacy will be admitted with concessions in such branches of the curriculum as are covered by their diploma, but will be required to devote three years to strictly technical work before applying for the degree of Doctor of Dental Surgery.

Graduates of the Dental Department are admitted to the Medical Department as students of the second year without examination.

FEES.

Matriculation (paid but once)	$ 5 00
Lecture Fees (each year)	100 00
Practical Anatomy Fee (first and second year)	10 00
Practical Microscopy (Freshman)	10 00
Examination Fee (not returnable)	25 00

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CALENDAR FOR 1897–98.

THE TERM

Will commence Monday, October 4th, 1897, and close March 31st, 1898.

THE MATRICULATION EXAMINATION

Will be held at the College Building, on Monday, October 4th, at 10 A. M.

THE DIDACTIC AND CLINICAL LECTURES

Will be held at the College Building, corner Post and Fillmore Streets, San Francisco.

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F. F. KNORP, M. D.
Adjunct Professor Physiology and Histology.

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E. GOODMAN, M. D., Ph. G.
Lecturer on Chemistry and Toxicology.

ROBERT DARLING, D. V. S.
Lecturer on Anatomy and Comparative Anatomy.

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Professor of the Principles and Practice of Medicine, University of California.

PROF. WILLIAM WATT KERR, M. A., M. D., Edin.
Professor of Clinical Medicine, University of California.

PROF. JOSEPH LECONTE, A. M., M. D., LL.D.
Professor of Geology and Natural History, University of California.

PROF. W. RITTER, M. A.
Assistant Professor of Biology, University of California.

DEAN.

F. W. SKAIFE, D. V. S., M. R. C. V. S., 30 Cedar avenue.

SECRETARY.

K. O. STEERS, V. S.,30 Cedar avenue.

College Dispensary.

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ROBERT DARLING, D. V. S., Horses, Cattle, etc.
F. W. SKAIFE, D. V. S., M. R. C. V. S., Dogs, etc.

COURSE OF STUDY.

The curriculum of this College comprises the fundamental sciences, and covers a period of three Winter Sessions of over six months each, commencing on the first day of October of each year, and extending to the end of March of the following year. The theoretical instruction will be by didactic lectures, class demonstrations and recitations. The facilities for instruction are equal to any in this country, and the courses extend from the first elements of Medicine to the latest researches in Veterinary Science, at home and abroad. The student will be trained under the special guidance of Professors in all the practical and technical details of the Profession. The following are the studies:

FIRST YEAR.

CHEMISTRY AND MATERIA MEDICA.
ELEMENTS OF PHYSIOLOGY AND HISTOLOGY.
ANATOMY.
DISSECTION.

SECOND YEAR.

PHYSIOLOGY AND COMPARATIVE PHYSIOLOGY.
ANATOMY OF THE DOMESTICATED ANIMALS AND COMPARATIVE ANATOMY.
PRINCIPLES AND PRACTICE OF VETERINARY SURGERY.
PRINCIPLES AND PRACTICE OF EQUINE MEDICINE.
PRINCIPLES AND PRACTICE OF BOVINE MEDICINE.
MATERIA MEDICA.
ANALYTICAL AND ORGANIC CHEMISTRY.
TOXICOLOGY.
DISSECTION.
CLINICAL INSTRUCTION.
THERAPEUTICS.

THIRD YEAR.

PRINCIPLES AND PRACTICE OF VETERINARY SURGERY.
PRINCIPLES AND PRACTICE OF EQUINE MEDICINE AND DERMATOLOGY.
PRINCIPLES AND PRACTICE OF BOVINE MEDICINE.
PRINCIPLES AND PRACTICE OF CANINE MEDICINE AND HELMINTHOLOGY.
VETERINARY OBSTETRICS.
BACTERIOLOGY.
PATHOLOGICAL ANATOMY.
VETERINARY HYGIENE.
CLINICAL INSTRUCTION.
THERAPEUTICS.

Lectures on special subjects will be delivered from time to time throughout the session.

The second and third year students, besides attending the clinics, must serve as aids in the hospital, and the third year they will be placed in charge of sick animals and required to make autopsies.



PHARMACY, DENTISTRY, MEDICINE AND LAW OF THE UNIVERSITY OF CALIFORNIA

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